DRUG AND COSMETIC INDUSTRY

JULY 1938

CONTENTS

EDITORIAL	25
NEW AND NON-OFFICIAL	26
FOOD, DRUG AND COSMETIC ENFORCEMENT PLANS	28
THE UPJOHN PLANT	32
THE ENDOCRINE COMPOUNDS	36
BIOLOGICS	38
MAKING STABLE CREAMS	39
MONTHLY COSMETIC SALES	41
AMINO ACIDS AS THERAPEUTIC AGENTS	43
DRYING PRINCIPLES AND METHODS	46
WATER PURIFICATION	50
MERCHANDISING NEWS	54
PACKAGES OF THE MONTH	58
PACKAGING NOTES	63
LEGAL ANGLES	65
NEWS	69
INDUSTRY'S BOOKS	82
PRODUCTION FORUM	85
PERFUMER'S SHELF	96
COMPOUNDERS' CORNER	99
ADVANCING THERAPY	107
READERS' QUESTIONS	114
PURCHASING DEPARTMENT	118

The Drug and Cosmetic Industry is published monthly by Drug Markets, Inc., Frazer V. Sinclair, President and Treasurer; Thomas R. Farrell, Vice-president and Secretary. Publication Address, 28 Renne Ave., Pittsfield, Mass. Editorial and General Office, 101 West 31st St., New York, N. Y.

Subscription price—$2.00 a year, in advance, Foreign Countries, $3.00. Single copies, 25c; Back issues 50c. Entered as Second Class Matter, January 1, 1928, at the Post Office at Pittsfield, Mass., under the Act of March 3, 1879.

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Printed by Sun Printing Co., Pittsfield, Mass.

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THE NEW LAW

THE industry now has to face a new Federal, Food, Drug, and Cosmetic Act. This new Act constitutes a real change in the law regulating this industry and manufacturers had better make up their minds that they are going to make changes or be headed for trouble. The section of the law regulating the marketing of new drugs is effective now and this in itself should tend to impress upon manufacturers that conditions are changed under the new law.

THERE is no question regarding the thought that this new law greatly strengthens the Food and Drug Administration in its regulation of this industry. The old requirement that misbranding must be both false and fraudulent is gone. Now it is sufficient for successful prosecution that the misbranding be false alone. This eliminates ignorance on the part of the seller of a product as a successful defense and ceases the unjust penalty which existed in the old law for knowledge on the part of the seller.

BY JUNE twenty-fifth, 1939, the entire new law will be in effect, and manufacturers will then have some idea of how great are the changes which the law will bring about. More stringent regulation of this industry, if conducted with cooperation on both the side of the industry and that of the enforcement agency of the Government, can only result in greater public confidence in the industry. And anyone knows that the greater the public confidence in the products of the industry, the greater also will be the public demand and use of the products of the industry.

THE new Federal Food, Drug, and Cosmetic Act, together with the Wheeler-Lea Act, should do much to correct the abuses that have long existed in this industry. Doubtless some abuses will always exist, but it is difficult to see how abuses of any material importance can occur under proper enforcement of these two new laws.

NEW and NON-OFFICIAL

MUCH PESSIMISTIC TALK IS HEARD from people who wonder how this industry is going to exist under the Wheeler-Lea Act and the Federal Food, Drug, and Cosmetic Act. These people will tell you that the power which the government departments have under these two laws is so great that they can put this industry out of business.

No such thing is going to happen. In fact when the industry gets in step with these new laws and general business conditions are normal, the volume of business done by this industry will probably rise to new heights.

The only difference will be that the methods of doing business in this industry will be changed somewhat. And those people who are able to adapt themselves to the changed conditions will be the leaders in the industry. It seems likely that the ethical phase of drug marketing will increase in importance and that all companies will be more ethical in their methods of marketing.

It must be realized that the trend in the industry was toward the methods of doing business which will more or less be required under these new laws. The people of this country are so well educated in health matters today that the old methods of merchandising the products of this industry no longer have the broad appeal that they once had. For this reason the new laws will bring the manufacturers in the industry more in step with the successful methods of marketing whether all manufacturers realize it or not.

There seems to be little doubt that the ethical field will be more crowded than it was previously. Keenness in competition in this phase of marketing drug products is bound to result as additional brains, successful in other marketing methods in this industry, turn their attention to the ethical phase.

THERE ARE MANY WHO ARE OF THE OPINION that the Wheeler-Lea Act made a new Federal Food, Drug, and Cosmetic Act entirely unnecessary. These people claim that Federal Trade Commission can act in any sort of abuse that the Food and Drug Administration can act in. Certainly this is true in a very high percentage of abuses that can occur. The Federal Trade Commission can act against any deceptive acts or practices in the interest of the consumer, and this pretty nearly covers the entire field of abuses. It is true that the F.T.C. can only invoke criminal penalties in instances of false advertising, and in other instances can only issue cease and desist orders with no penalties.

FATE PLAYS MANY TRICKS, and in the case of the Federal Food, Drug, and Cosmetic Act, the hand of fate was most apparent. Senator Copeland had struggled five years with the Department of Agriculture, the food people, the drug people, the cosmetic people, and consumer organizations to get his bill passed by Congress. Time after time the bill failed of passage under attacks beyond Senator Copeland's control. The Senator was out of step with the New Deal, and there seemed to be real basis to the statement that the New Dealers would not allow a bill sponsored by the Senator to become law. Finally the Senator, because of his intense interest in the subject, forgot the advice which he had given others in the Senate to go slow. He saw his bill pass the Congress, but died before it was approved by the President.

NOW THAT THE FAMOUS S 5, or the Copeland Bill, has become law, the matter of Federal Food, Drug and Cosmetic legislation can be considered settled for a long time. Now it is to be hoped that the states of the Union will pass similar laws so that the laws governing this industry will be uniform throughout the country. With forty or more state legislatures meeting in 1939, it is fortunate that the Federal law has been enacted. Next year will be an excellent opportunity to have the state laws changed to conform with the new Federal law.

While the new Federal law in the main does not become effective until one year after it was approved by the President, or until June 25, 1939, the new drug provision and some other parts of the law became effective when the bill was signed. Therefore, new drugs cannot be placed upon the market until they are submitted to the Food and Drug Administration for approval.

THE MARKETING OF PERFUMES AND COSMETICS is a business quite different from that of marketing drugs. The marketing of perfumes and cosmetics calls for a lot of stunts designed to interest the trade and the consumers at different times. Constant stimulation is necessary to keep the volume of sales at a peak.

Price maintenance was more eagerly sought by the perfume and cosmetic houses than by any other houses in this industry. Prices of these products must be held stable so as to keep the distributors happy and cooperative in the various merchandising schemes. However, there are some in the cosmetic business who prepare special merchandise for sales, and there are still others who cut the prices on their entire lines twenty per cent. for a given period during the year.

The question of whether or not the general cut in price for a given period is sound merchandising is being argued back and forth. There are some who believe that it is entirely wrong in principle, since many women stock up for an entire year during the sale period and therefore the sale of the

merchandise at the regular prices is materially affected. However there are others who maintain that the method is very successful. Of course the distributors do not bear any more than their proportionate share of the cut since the prices are scaled down at wholesale as well as at retail and the retailers get the same percentage of profit as they do when the goods are sold at regular prices.

The sales are placed either in February or July. The February sale is a good stimulant to business after the heavy Christmas season. Department stores are not so keen about the July sale since their real good customers are away from the cities at that time. Like all such schemes, this method probably has its advantages and its disadvantages. Some manufacturers will use it and others will not, but the scheme is apt to be with the industry in one form or another for a long time.

ASPIRIN CONTINUES TO INCREASE in use, and sales during 1937 were twenty-five per cent. greater than in 1936. The steady increase in the use of Aspirin can be appreciated from the fact that 5,143,672 pounds were sold during 1937, compared with 3,143,762 pounds in 1933. Considering that Aspirin tablets contain five grains of Aspirin, the total number of tablets available from the amount of Aspirin sold in 1937 would be 7,201,140,800. Assuming that two tablets, or ten grains, is the normal dosage for a headache, the number of headaches that could have been cured with last year's Aspirin totals 3,600,570,400. The firm position and wide acceptance of Aspirin has long been realized in the industry, but the continued growth of the product is little short of amazing.

WE ARE PLEASED TO SEE THAT THE SECOND U.S.P. XI SUPPLEMENT has been authorized by the U.S.P. Board of Trustees. It is planned to print and release this on January 1, 1939. So far, so good. However, we wish that the U.S.P. would issue supplements at regular intervals—annually or otherwise—as was the original plan. We do not think that the reason presented by the U.S.P. for abandoning this plan—the fact that some years a large number of monographs might have to be revised, while in other years very few would have to be revised—is sound. The main thing about making interim revision successful is that everyone should know when supplements are issued so that he can easily keep his U.S.P. up to date. Supplements issued at any old time do not help the person who is intelligently trying to comply with the latest official standards. The plan of having on file the name and address of everyone who has bought a Pharmacopoeia and then notifying them when supplement are published would tend to help, but this can not be done until a new complete revision is made. In the meantime it is to be hit or miss.

"Yeah, but the F.D.A. says one thing, and the F.T.C. says another."

THE VITAMIN SITUATION HAS BECOME so complicated that there are relatively few who are entirely up on the subject in all its ramifications. Even the matter of vitamins A and D, which used to mean simply cod liver oil, is quite complicated in itself. We have so many different sources of these two vitamins from fish livers and other products that the matter of finished products with their different sources and varying potencies and different dilutions or concentrations, is quite a subject. The matter of cod liver oil in itself is rather complicated because of the fact that we have oils from different countries, known as Norwegian oil, Iceland oil, English oil, German oil, and other kinds of oil. The fact of the matter is that the boats from these various countries fish very largely in the same waters, and for this reason the country distinction given to the oils is largely meaningless. If the oils were really named after the exact location where the fish were caught, the discription might mean something.

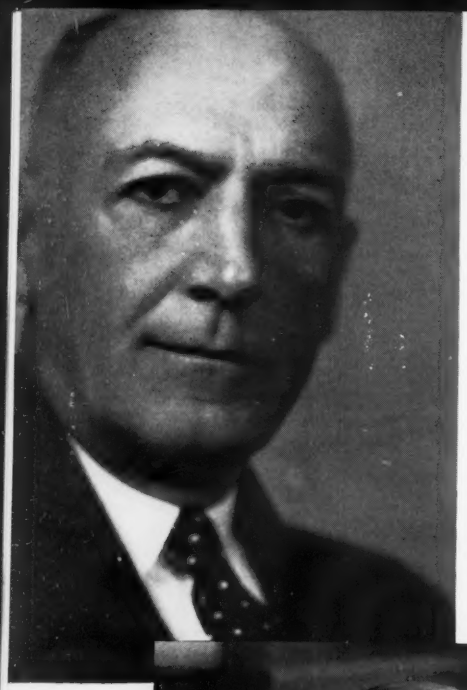
Involved in these distinctive names is the question of potency of cod liver oil which varies widely. We are told that one or more of the countries after which the oils are named have no refineries and that the refining is carried out on board the trawlers. This gives rise to the question whether or not many livers other than those of the cod are not used for extraction of the oil. Under such circumstances, halibut livers, swordfish livers, and others might easily be included, resulting in a "cod liver" oil of quite high potency. All of which simply means that by and large vitamins are now becoming vitamins no matter what is the source. And those who want natural cod liver oil have to stick to the old reliable sources, such as Norway, which have not been swayed by the present trend.

PARTICULARLY INTERESTING IN THE FOOD, DRUG, and Cosmetic Act is the fact that the definition of cosmetic includes all raw materials that enter into the manufacture of the finished products. This definitely eliminates raw materials that might prove dangerous when used in cosmetics and gives the Food and Drug Administration the power to seize these raw materials in interstate commerce and bring proceedings under the law.

Some manufacturers who buy raw materials of this nature have been requesting from the sellers guarantees that the products complied with the Federal Food and Drugs Act. Before the new law was enacted, no one could properly give such a guarantee as there is nothing in the old Food and Drugs Act covering these products. Doubtless these requests will now be multiplied and they will have to be given if demanded.

Therefore it is up to the sellers of raw materials to study the new law and find out just what the requirements are so that the products sold can be properly guaranteed. After all, no one can blame a manufacturer for thus protecting himself against the use of raw materials that might prove harmful. Remember that some one interested in the sale of diethylene glycol was the basic reason why it was ever used. Statements about lack of toxicity are quite easy to make, but a written guarantee, backed by real evidence is what is needed.

NEW DRUG LAW



At left, Walter G. Campbell, Enforcement Chief of the Food and Drug Administration; below are Dr. James J. Durrett, Chief of Drug Control, and Dr. Paul B. Dunbar, Assistant Enforcement Chief.

ALMOST five years to the day after the original Tugwell bill was introduced, Congress finally passed the new food, drug, cosmetic and device act. That measure became law with the President's signature on June 25, last, within less than a week of the thirty-second anniversary of approval of the first federal food and drug law on June 30, 1906. Final Congressional action on the new measure occurred June 13, last, which was five years and one day after the Tugwell bill was first introduced in Congress. Dramatic, as well as sudden and tragic, was the death of Senator Royal S. Copeland of New York, within a few days after Congressional approval had been obtained for the conference committee report on the bill, representing success of his fight of half a decade for revision of the food and drug law. Unquestionably the Senator's hard work on that measure hastened his untimely end. The new law is regarded by Secretary of Agriculture Wallace as a monument to the late Senator from the Empire State.

For the most part, the new law does not become effective until June 25, 1939, and the lapse of this period will give the trades and industries affected time to familiarize themselves with what it is all about. Meanwhile the Department of Agriculture will have opportunity to organize its work and prepare plans and regulations for enforcement and administration of the act. Three important provisions of it, however, became effective immediately upon approval of the act by the President. They prohibit:

1. Drugs dangerous to health when used in the dosage or with the frequency or duration prescribed, recommended or suggested in the labeling.

2. Introduction of new drugs before application for their introduction becomes effective.

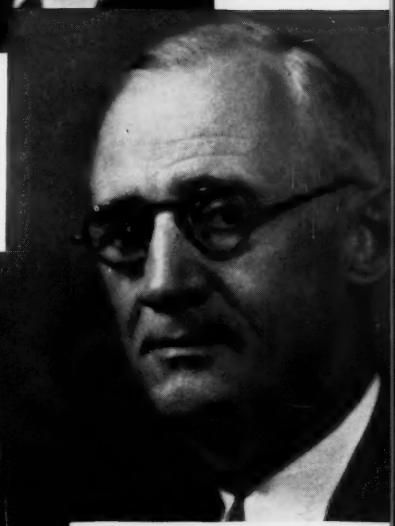
3. Cosmetics which may be injurious to users under conditions prescribed in labeling or under customary or usual conditions. However, poisonous coal tar hair dyes will not be subject to action under this provision by reason of their failure to bear the prescribed warning until 90 days after the law was approved.

The provisions of the new law relative to new drug products are so important and far reaching as to be

Left, H. O. Calvery, Chief of Pharmacological Division; right, George P. Larrick, Chief Inspector; below, Chester P. Tolle, Assistant Chief Vitamin Division.

revolutionary in their character and ultimate effects, in the opinion of qualified students and observers connected with the drug industry. Under these provisions a manufacturer or producer may not put on the market a new drug product until after it has been submitted to the Department for approval, together with information about its make-up, testing, usage, safety, labeling and methods used in its production. This requirement is the outgrowth of the tragedy of 1937 that resulted in the death of an estimated 100 or more persons from the use of elixir of sulfanilamide. The Department may withhold its approval of new drug products for a total of 180 days, pending investigation, after which such withholding may become permanent. It is presumed to act on the basis of information furnished by manufacturers, which it may check against experiments, investigation, and research of its own. If it withholds approval of a product, the manufacturer can appeal to the Federal District Court.

This provision for court review is entirely separate from the general court review provision of the act in the form in which it was passed by the House of Representatives. Under the latter provision, it would have been possible for manufacturers or producers to go into any Federal District Court and fight *regulations* that may be issued by the Secretary of Agriculture under the law. It was that provision that moved Secretary of Agriculture Wallace to issue a public statement that the new bill would be worse than the old law. This general court review provision, however, was modified in the Conference Committee and finally adopted by both Houses of Congress in such form as to permit appeal from Department regulations only to the ten Federal Circuit Courts of Appeals throughout the country.



Above, James O. Clarke, Chief Central Division, Chicago; right, W. R. M. Wharton, Chief Eastern Division, New York; below, James L. Harvey, Chief Western Division, San Francisco.

As finally enacted into law, the new food, drug and cosmetic measure is understood to be pleasing to Department officials, on the whole, and to be fairly satisfactory to the drug, cosmetic, and other industries affected.

In support of the trade view that the new law is revolutionary in some of its aspects, attention may be

called to certain features about which there seems to be considerable lack of information or misunderstanding, as manifested in inquiries received in Washington. In a long range view, it is believed by some authorities, many small drug and medicinal concerns will have to go out of business or materially reduce their operations because they will be unable to carry on and comply with all the requirements of the law, especially those relating to new drug products. On the other hand, it is believed, large concerns with ample capital resources for research work and the like will be able to stand the gaff.

The far-reaching character of the new drug provisions may be grasped when it is stated that whenever a drug label is changed, the product bearing it becomes a new drug subject to all the restrictions relative to testing, application for approval prior to marketing, and so on. Under this provision, it is believed that if the Food and Drug Administration were to require the label on a standard drug or proprietary product to be changed, it would then become a new product subject to all the restrictions above referred to.

Not only will new finished products and old drugs with new labels be subjected to the restrictions on new products, but it appears that materials used in making new drug products also become subject to regulation under Section 505 (i) of the new law. Such materials, industry representatives fear, may not be shipped in interstate commerce to the manufacturer of a new drug product without coming under the jurisdiction of the Department, on an application for exemption. Under this interpretation, it is believed, the Secretary could require full information about the materials and the product it goes into, its effect when used for medicinal purposes, and so on, before granting the exemption. If this interpretation is correct, it appears that drug manufacturers will be subjected to a double check on the production and marketing of new drugs.

Chemicals, so-called, are definitely included under Section 505, it is believed, despite an impression existing in certain quarters that chemical manufacturers are exempt from the new law. All chemicals used as drugs are subject to classification as such and to the restrictions, requirements, prohibitions, and regulations of the law applying to drugs. Certain chemicals packaged and used primarily for industrial purposes may be exempt in practical administration of the law.

Private formulas for drug products will be seriously affected, it is believed, as new drugs, unless those putting out such products, including many chain stores and the like, can get around the new drug features of the law by using the same old formulas or specifying the same old uses, in which case the products might be classed as old drugs. Any variation in formula, ingredients, strength, usage, labeling, however, would apparently create a new product. The manufacturer must obtain approval of the Department before filling orders for new formulas from chain stores, etc. The question arises whether the manufacturer will put up the necessary money for research work to determine whether such products would be safe, so that he can convince the Secretary in order to obtain the latter's approval. Or will the chain stores or other concerns under whose brand the product goes out foot the bill for such items?

While the penalty provisions of the new law may not specifically apply to its new drug provisions, yet industry representatives believe that the latter are so closely tied up with the penalty clauses that the manufacturer may incur serious risks if he fails to comply to the fullest extent with the provisions of Section 505 relating to new products. Ramifications of the new law may be so vast that the whole changing picture tends to make it appear that adequate Washington representation to deal with problems arising under it is vitally necessary.

Glandular products are believed to be in for a very thorough checking up under the new act. Such products, it is believed, will require a great amount of research, testing and justification to prove their value to the Food and Drug Administration, once they are challenged. Dr. J. J. Durrett, Chief of Drug Control, FDA, is reported to have suggested some time ago that, aside from pituitary and thyroid preparations, most glandular products have little or no merit when administered orally. The fact that some glandular products have been on the market for a long time and that manufacturers have done a lot of business and made plenty of money, will not justify their continued existence and marketing in FDA opinion. Dr. Durrett is understood to have been after a certain well-known western manufacturer of glandular products for some time. The controversy between the A.M.A. and the manufacturer of a certain endocrene gland product is fresh in the minds of readers of medical and trade journals.

Officials of the Department of Agriculture realize that great responsibility rests upon them especially under the new product provisions of the law. They will be called upon to say whether such a product is safe for the public health before it goes on the market. Under the circumstances, the belief exists in trade circles that FDA will watch its step and will be strict in enforcing these provisions. If the Department does not forbid a manufacturer to market his goods, it is pointed out, that fact might be taken in some quarters as an indication that the Department indirectly approves the product. Dr. Paul B. Dunbar, Assistant Chief of FDA, believes that the Secretary will be perfectly sure that a drug is sage before it goes on the market. Whether or how these precautionary provisions can be worked out in practice without unduly hampering legitimate research and industrial operations is a question.

The new drug provisions are regarded as having perhaps peculiar application to pharmaceutical manufacturers because they are the industry group which largely develops new and important drug products, based on long and expensive research work. On the other hand, it is claimed that proprietary manufacturers may not be so much affected, although if the interpreta-

tion above suggested that a new label constitutes a new product, be adopted, they would appear to be practically in the same boat as the pharmaceutical group.

Although Congress has dropped a tremendously important new task into the lap of Department of Agriculture, and Secretary Wallace has said that he will place administration of the new law in the hands of FDA, the national legislature has not provided any additional funds for that purpose. The appropriation for food and drug law enforcement for the fiscal year beginning July 1, 1938, is $1,750,000, which Dr. Dunbar says is the same as was provided for the fiscal year ending with the above date. During the year FDA is charged not only with enforcing the old food and drug law, but also enforcing provisions of the new law already in effect and in making far-reaching preparations for enforcing the remainder of it after June 25, 1939. Being limited by the appropriations, the same setup and personnel will operate for the time being in FDA, according to Dr. Dunbar.

"There will be no change in general procedure," said Dr. Dunbar to Drug and Cosmetic Industry. "The project system will continue to be followed in enforcing the new law as has been done for a number of years in enforcing the old one. That has been tried and proved to be a good practical method. Besides enforcing features of the old law that are retained or renewed under the new law, the Food and Drug Administration must undertake the regulation of cosmetics, devices and of compounds used for altering the structure of the body that have not heretofore been covered by law."

While it is too early yet for FDA to say definitely, it is not unreasonable, in the opinion of its high officials, to expect that a new Division of Cosmetic Control will be set up in the administration. Whether there will be another new division handling devices of various kinds could not be learned.

The regulation of devices presents problems that are puzzling and complicated. FDA, however, has had some experience in that connection by cooperation with the Post Office Department, in dealing with fraud order cases involving devices of various kinds. Perhaps the practical method of dealing with the device problem would be for FDA to secure plenty of cooperation from the United States Bureau of Standards. That Bureau has been consulted heretofore by FDA about physical science problems, as has the United States Public Health Service been consulted about health problems. The Bureau of Standards will find itself called upon to test and determine the value of all sorts of devices, such as prophylactics, so-called electric belts, electric inner soles, devices for developing or straightening certain features or portions of the body, or reducing the same. If an elaborate program of this sort is undertaken, however, it is believed that the Bureau of Standards will want some additional money.

That matter would be up to Congress. FDA officials believe that some sort of financial cooperation will have to be provided for if a broad program of testing, checking, and standardizing devices is undertaken. Something similar has been carried on for a considerable period under which the Post Office Department pays for the services of certain experts or other employees of FDA engaged in testing devices and medicinal products with which postal authorities are dealing through the fraud order method. Devices will be tested by FDA on "guinea pigs," human and animal, according to present plans.

It has long been a practice for certain industries to provide funds creating fellowships under which research work has been carried on at the Bureau of Standards in which a particular industry is interested. While this method is regarded as satisfactory in carrying on developmental work, its value in regulatory work is doubted in some official quarters. There, it is feared that the claim may be made or the impression created that a fellowship worker might be more interested in his own product or industry than he would be in some other device or product.

Whatever else is decided about testing and standardizing of devices, it is a foregone conclusion that the Department of Agriculture will seek a deficiency appropriation next winter to assist it in carrying out its work under the new law. A large increase in FDA organization is deemed necessary if enforcement of all the many and important provisions of the law is seriously undertaken. And there is no reason to believe that the Department does not plan such a serious undertaking.

Pending the granting of additional funds and during the lapse of the year ending June 25, 1939, Dr. Dunbar says that FDA will proceed to draft regulations and prepare for hearings authorized under the new law. The first regulations he expects to be undertaken are those in connection with provisions of the law effective immediately. One of these relates to exemptions under Section 505 (i), relating to new drugs. Dr. Dunbar does not expect that hearings will be held during this summer. He thinks, however, that they may be fairly continuous for some time beginning next fall. Some of them may be held outside of Washington. In any event, he says, full opportunity will be given for industry and the interested public to be represented at such hearings. The United States Supreme Court has charted the course to be followed by the Department in connection with hearings and regulations, in its decision in the stockyards case.

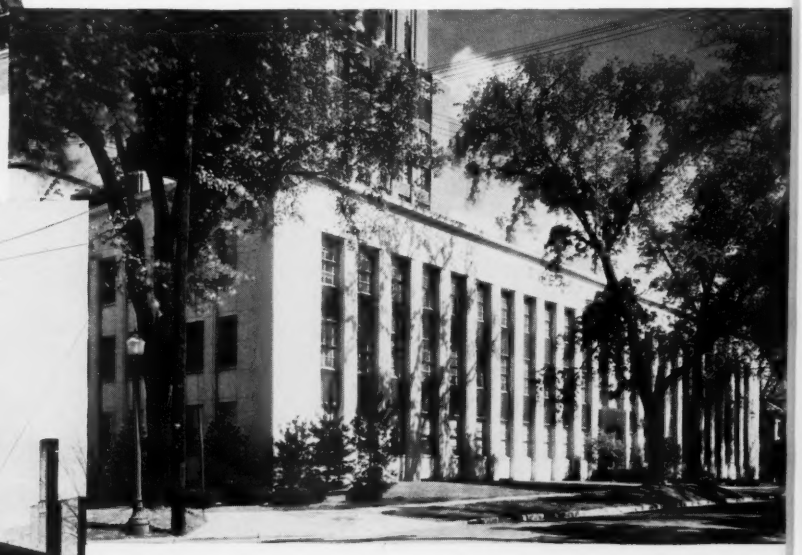
It is understood that it will be the purpose of the Department to be careful to develop regulations relating to foods, drugs, cosmetics and devices under the new law in the proper manner. By the end of the preparatory year it is expected that the Department will be ready with regulations for issuance under the new law when most of its provisions become effective. It is expected that draft regulations will be submitted to trade and industry associations and other groups interested for suggestions and criticisms. While the Department does not promise to accept or agree to

(Continued on page 52)

Above, new factory with administration building in foreground; right, power plant; lower left, cod liver oil concentrate plant; lower right, administration building.

THE UPJOHN PLANT

ANTICIPATING by two years the 50th anniversary of its founding in 1886, The Upjohn Company of Kalamazoo, Michigan, began in 1934 a major expansion of its laboratories and offices. During the steady growth of this pharmaceutical manufacturer in the last half-century, building after building was added. Each was intended to provide ample room for expansion, and each



Left, main office lobby; below, reception desk; lower right, library in first floor of tower; lower left, lobby of medical department.

in turn was in full use to the last square foot before it was a year old. By 1934, there were 18 of these buildings—and still it was necessary to lease outside storage space for raw materials and finished goods. In answer to the need for increased capacity, a new plant and a new office building were designed by Albert Kahn, and completed in 1937. In the erection of these two units it was necessary to remove only one of the earlier structures.

The first six floors of the thirteen in the new plant measure 72 by 252 feet, and are used for production, storage, and shipping. The remaining seven, devoted entirely to research, form a tower over the center of the building. In front of the plant and connected with it by a bridge on the three upper levels is the administrative office of four floors, measuring 54 by 208 feet. The combined floor space of these units is 250,000 square feet,

almost equal to one-half the previously existing 521,000 which are still in active use.

This group of buildings, which includes a vitamin-extraction laboratory and a new heating plant, is conveniently located two blocks from the business center of the city, and dominates the surrounding area. A new warehouse, 501 by 150 feet, was constructed in 1937 on the north side of Kalamazoo. Virtually all finished goods are transferred there for shipment to the eight branch offices of the Company.

Space will not permit mention of all the construction details to be found in the new Upjohn plant and office. Both buildings are, of course, completely fireproof. The office is constructed of Indiana limestone, with interiors of ivory finish. The plant building is of brick, with interior of mat-faced buff tile. Floors in both buildings are of Gibraltar composition, and in the plant enamel-finished partitions are of metal and glass construction, built in sections, making alterations quick and easy. The upper floors are served by two modern elevators. Ceilings in both plant and office are white, windows are equipped with venetian blinds, and artificial lighting is by the latest type of indirect lighting fixtures.

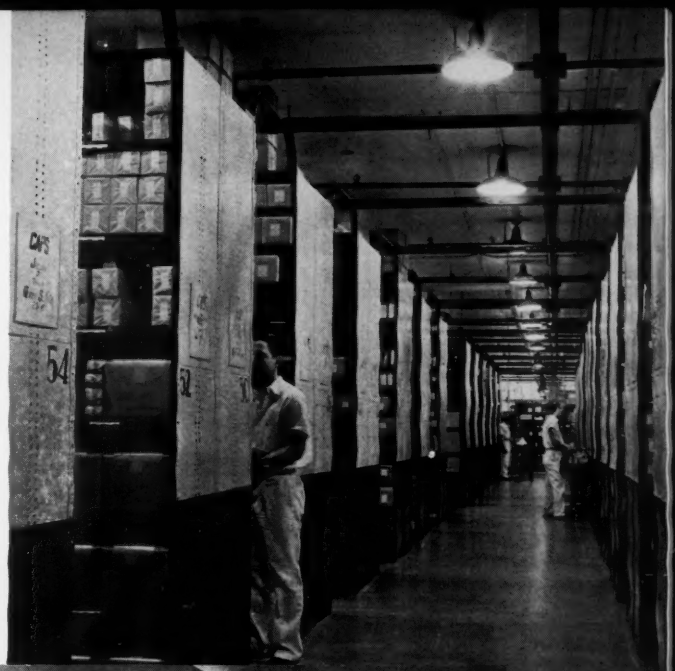
Much study was given to the arrangement of departments before architects' plans were approved. As the Research Department is concerned with every production process in the Upjohn laboratories, it seemed logical to place it in the tower where, for its own purposes, it would have

plenty of light, air, and privacy, and at the same time would be enabled to keep in close contact with every phase of production. The Upjohn Research Department consists of four divisions: Medicine, Chemistry and Pharmacy, Nutrition, and Pharmacology and Endocrinology. In close association is the biological control department, which has its own floor in the tower. It requires, in addition to other animals, the use of 10,000 albino rats a year for the testing of a wide variety of products. On the seventh floor are the library, reading rooms, and a large lecture room, all of which are air conditioned.

The first six floors of the plant were assigned to various departments in such a way as to permit an orderly progress from raw materials to finished goods. The result is that manufactured products make their way from upper to lower levels, the second floor and basement being used entirely for storing stocks of finished goods, from which orders are filled and sent by belt conveyors to the first floor to be packed for shipment.

On the top floor of the tower are located four tanks, holding a total of 244 tons of hot, cold, and distilled water, supplying not only the laboratories, but also the vast sprinkler network throughout the building.

Complete air conditioning is used in the office building, library, lecture rooms, and in many manufacturing departments where exact atmospheric conditions are essential to production and packaging processes.



THE ENDOCRINE

"The invariability of the action of the same manufacturer's endocrine preparations may be doubtful until complete isolation and identification of different principles and accurate standardization of each are obtained."

IN SPITE of the fact that endocrinology is a new branch of science, it is holding its own from the standpoint of the multiplicity of articles in the literature concerned with its many phases, as well as for the complexities, disagreements and confusion frequently noted therein. Much of the chaos of a decade ago has been eliminated, but complete order has not been attained. Some of the unfortunate recent happenings in the field of therapeutics stress the growing importance of this branch of science in the manufacturing world. Endocrinology is primarily a biochemical subject. Advances of marked importance are being made in the isolation of endocrine principles in crystalline form, and the knowledge of their pharmacological and physiological properties is rapidly increased. The isolation and determination of their chemical structures are, obviously, chemical and biochemical problems. The determination of the mechanism of their actions demands critical, extended physiological and biochemical investigations.

Endocrinology was necessarily chaotic and inexact until chemical investigations of so-called "internal secretions" resulted in the isolation of several specific compounds which possessed specific physiological functions. With the recent advances in this field and the resulting increase in knowledge concerning a portion of these internal secretions and their physiological and pharmacological activities, endocrinology is rapidly assuming its status as an exact science inseparably correlated with physiology, biochemistry and pharmacology.

There is a growing acceptance of the truth that the normal function of the endocrine glands is not a detoxication, but is, instead, the production of specific chemical compounds which are essential to the normal functioning of the entire organism. Although disease of the endocrine glands may result in the production of too little or too much of these specific compounds, abnormal compounds are *not* produced. These are two fundamental truths worthy of decided emphasis.

It is unfortunate that the terminology of endocrinology rather handicaps than helps the advancement of the subject. Various names have been coined for these specific compounds as a group, and some of them are derived from the presumed function of one member of the group. For example, "hormone," is the term proposed by Bayliss and Starling following their discovery of "secretin." The term is derived from the Greek *hormon*, meaning "rousing," or "setting in motion." The investigators suggested the term as a name for the class because secretin "aroused" the pancreas to increased secretion. However, although this term is suitable for secretin, it is not correctly applicable to the majority of endocrine "secretions," for many of them are not "hormonal" in action.

The term "endocrinology" has been accepted as designating the study of "internal secretion." It is the branch of science concerned with the glands which separate within themselves *specific compounds* and secrete these compounds into veins and possibly lymph vessels. These specific compounds bring about specific effects elsewhere within the living organism. These glands have been designated as the "endocrine glands," and the specific compounds formed by them are commonly termed "internal secretions" or "endocrine secretions." The writer prefers, however, the terms "endocrine principles" or better "endocrine compounds"; the latter term stressing the specific chemical nature of these substances some of which may never be satisfactorily isolated.

Endocrine compounds have been definitely associated with the adrenal, thyroid, parathyroid and pituitary

COMPOUNDS

By A. RICHARD BLISS, JR.

glands, the islet tissue of the pancreas, the thymus and the pineal, the mucous membrane of certain portions of the gastro-intestinal tract, and the reproductive organs. The most involved and puzzling problems in this field are those concerned with the interrelationships of the activities of two or more endocrine compounds. These apparent interrelationships obtrude into the majority of discussions of cases displaying disturbances of the endocrine glands, and even of normal functions. They have suggested many syndromes, the inaccurate conceptions of which have resulted in numerous inaccuracies in therapeutics.

Only two or three of the endocrine principles have been conclusively shown to be effective by oral administration. Increasing knowledge of the nature and actions of some of the others has established a demand for properly standardized concentrates acceptable for injection. Replacement therapy should take into consideration the foregoing important facts, and only properly standardized preparations should be employed. Replacement treatment by grafts has proved only of transient value, the duration varying with the different endocrine tissues. Stone, Owings and Gey have developed a technique which gives promise of better results. Tissue cultures of thin sections of cells are grown for from two to four weeks in the blood serum of the host, and these are then implanted in the region of the axilla or groin. Good results have been reported in cases of thyroid deficiency and parathyroprivic tetany.

Surgical treatment appears to be the best procedure for most of the conditions in which hyperfunction exists. X-ray therapy has been employed, but the possible benefits therefrom have not been fully established.

Generalizations concerning the correct therapeutic dosage of endocrine preparations are not acceptable; individualization is essential. In the cases of pure endocrine principles or derivatives, such as crystalline insulin, thyroxine and oestrone, dosage can be based upon specific amounts, but in cases where replacement therapy is indicated individual requirements vary, and the amount of nonfunctioning endocrine tissue whose normal output must be replaced differs with the individual patient.

The impossibility of accurate dogmatism in endocrine therapy is illustrated by Collip's "Principle of Inverse Response" which he defines as "the responsiveness of an individual to administered hormone varies inversely with the hormone content or production of the individual's own gland." In cases of total thyroidectomy, which are obviously examples demanding total replacement, the requirements of individual patients are related to body-volume or body-surface, or both, sex and age.

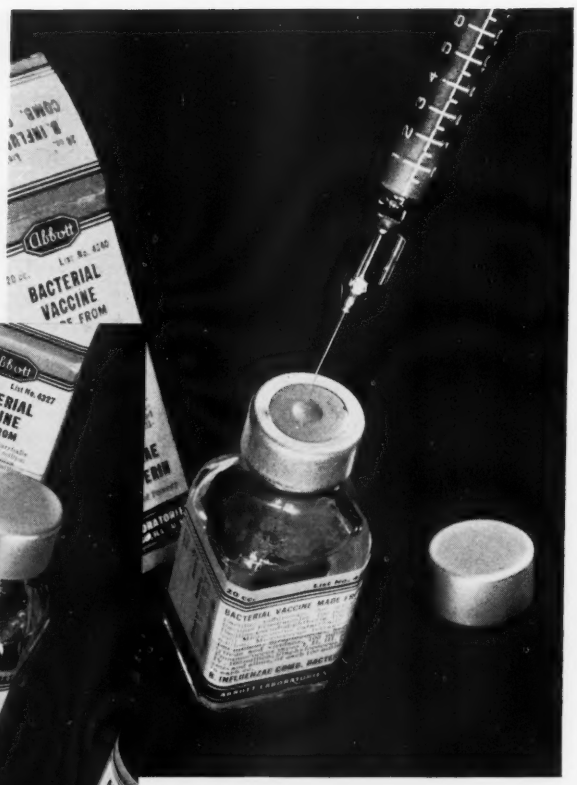
When pure preparations are not available, accurate standardization is not only necessary, but in addition a correct basis of standardization. For example, the same quantity of desiccated thyroid gland may give variable results if different preparations are given to the same individual at different times. Desiccated thyroid gland, consequently, is standardized according to the iodine content.

A rather perfect example of difficulty in precision of dosage is anterior pituitary with its numerous principles, none of which are yet commercially available in pure condition. Commercial products, suitable for injection, appear to be mixtures in uncertain proportions of two or more of these principles, and consequently the dosage for specific purposes must be a matter of trial. The standardization of most of the endocrine compounds is by biological methods, and these not infrequently yield but approximate results. General agreement in most

(*Continued on page 42*)

BIOLOGICS

Upper right, great care is necessary in the production of vaccines as this view showing an Abbott employee transplanting stock cultures indicates. Upper left, filling an Abbott vaccine in a glass compartment to prevent contamination; lower left, group of Abbott vaccines showing the Bulk Bacterin Safety Seal in the foreground, all of these packages being capped with the sanitary aluminum seal, a development of the Aluminum Seal Company for Abbott Laboratories; lower right, tamper-proof disk is removed exposing inner rubber stopper. Depression in stopper, an Abbott patented feature, marks the thin membrane that can be easily punctured by a hypodermic needle.



MAKING STABLE CREAMS

By THORPE W. DEAKERS

WHENEVER one of two immiscible liquids is suspended in the other in tiny droplet form, we have what is known as an emulsion. And it has become a common practice in the field of cosmetics to describe emulsions which hold together for a period of about six months without visible separation as permanent and those separating in less time as unstable types.

Emulsion breakdown is generally caused by the use of an insufficient amount of emulsifying agent. Theoretically just enough emulsifying agent is necessary so that each particle of the suspended phase is completely coated by the agent. In practice, however, and particularly in cosmetic formulation, many times this quantity is often essential because this increase has been found not only to assist the formation of the emulsion but also to impede the migration of the lighter liquid to the top. Especially then where liquid emulsions are concerned, we can realize the need of an excess of emulsifying agent to secure a gel-effect and can understand more readily why a number of manufacturers invariably dump large quantities of castile soap into their hand lotions even after the emulsion has been formed.

On the other hand in beeswax-borax emulsions of the cream variety, a few may make the mistake of thinking that the use of an excess of borax always renders their products more stable. Over and above a certain amount of borax, an increase in its use will do little good to secure emulsion permanency. The reason for this is beeswax will give only a definite amount of soap and no more, and the quantity is governed largely by its acid number. For after the free cerotic and melissic acids of the beeswax are neutralized by the borax, no further soap will be formed by adding more weak alkali.

If, then, we are experiencing trouble with separation or creaming in the case of a liquid beeswax-borax emulsion, a more stable product may be secured: 1. By adding castile soap; 2. By adding a gum mucilage like quince seed; 3. By adding emulsifying agents such as glycol stearate, glycol oleate, or other glycol esters. Mono-glyceryl stearate also serves as an excellent secondary emulsifier.

In working with emulsions of a waxy character in which the oil phase is crystallized at room temperatures, castile soap and gums are not the best ingredients to use as supplementary emulsifiers. To insure stability with these types, a waxy emulsifier is called for, and any of the glycol stearates will go far in giving a lasting emulsion of the cold cream or tissue cream type.

Breakdown may be caused by the method in which the constituents of the emulsion are incorporated. Even though a formula is completely balanced as far as the emulsifying agent is concerned, the method of formulation has much to say about the final result. In many cases when the conventional method of pouring the water phase into the oil phase was reversed, a finer cream was obtained.

Often during our experiments, we discovered that we had two types of emulsion existing in the same cream. Naturally the creams were grainy looking and separated in a short time. The use of an auxiliary emulsifying agent, along with the beeswax-borax combination, corrected the above condition, for it seemed to start the emulsion off on the right foot.

Separation, oil leakage, and creaming may also be caused by employing too light a mineral oil. Many instances of separation have been remedied to our knowledge merely by increasing the viscosity of the oil.

Emulsion breakdown may result from a reaction between the emulsifying agent and other constituents in the same preparation: Recently a firm was bothered

with separation in its hand lotion. Investigation proved the salicylic acid, which was being used to preserve the quince seed gum, was the cause. Another example of reaction bringing about emulsion breakdown is illustrated by a firm manufacturing a wave-set. Analysis showed an acid was causing the breakdown. In going over the formula, there was no indication that an acid was employed. The wave-set was chiefly a karaya gum mucilage. And this in turn was prevented from spoiling by an excellent preservative. However, it didn't stop the karaya gum from splitting off acetic acid in solution. The end result was that the acetic acid reacted with the emulsifying agent. When separation occurs, therefore, it is important to consider whether such separation is caused by a reaction of any ingredient in the product with the emulsifying agent.

So many new types of emulsifying agents have appeared in recent years that it is difficult to keep track of them: There are the various brands of glycol stearates and glyceryl stearates and other fatty acid esters of the glycerides. As a rule they make more permanent emulsions and are easier to form than the borax types. This is especially true of liquid emulsions. Yet when using them either as auxiliary or the main emulsifying agents, troubles may arise because different firms mix their trade-name products with additional soaps. Thus mono-glyceryl stearate usually has a small quantity of potassium stearate added to enhance emulsification. If any relatively strong alkali or acid is used with such a product, a reaction may occur and the emulsifying ability of the glyceryl stearate will be reduced. Zinc oxide, vanillin, and a number of electrolytes are incompatible with mono-glyceryl stearate. Also there are some brands of sun screens which react with this chemical. As these are put out under different trade-names, it would be well for any manufacturer of suntan products to inquire whether the products he is buying under a trade-name are compatible with the chemical sun screen.

Glycol distearate creams are not as reactive as the mono-glyceryl types but do not make as good emulsions. As a consequence different brands of glycol distearates like the mono-glyceryl types may frequently have potassium and ammonium soaps mixed in with them to start the emulsion.

Experience has taught us that mono-glyceryl stearate creams are difficult to stabilize if more than five per cent. of mineral oil and paraffin are included in their fabrication. We have found that mono-glyceryl stearate works well with cetyl alcohol up to about two per cent., and spermaceti, beeswax, and glycerin up to about eight per cent.

Although it may be beside the point in this article, we would like to mention that creams made with triethanolamine stearate, despite the fact that they are extremely stable, in time turn yellowish-brown, especially when exposed to light. In fact most creams formed with an ammonium soap or an amine emulsifier will do likewise.

Vanishing creams made from mono-glyceryl stearate require a preservative to stop mold growth and subsequent separation, particularly if glycerine is used in the product. When borax and potassium soaps are included in a mono-glyceryl stearate cream generally a preservative is unnecessary. Vanishing cream separation, caused by freezing, can be corrected by adding a small amount of mono-glyceryl stearate or by increasing the glycerin content. In making creams with mono-glyceryl stearate as the emulsifying agent, one should not use over three per cent. lanolin or absorption base because the latter products tend to form a different type of emulsion than the glyceryl stearate.

Sodium lauryl sulfate may be utilized to good advantage in acid types of cream, provided again that it is compatible with the other ingredients.

Thus far the discussion of emulsion breakdown has been chiefly concerned with oil-in-water types. Emulsion breakdown occurs frequently in absorption base creams of the water-in-oil variety, and the direct causes of most of these breakdowns are: 1. Heat; 2. Chemical incompatibilities; 3. Failure to make a small particle size emulsion; 4. Insufficient emulsifying agent; 5. Improper selection of waxes as hardening agents.

Considering the cause of separation of w/o types due to heat instability, little can be done except to increase the percentage of wax in the finished product, which in turn gives the preparation a higher melting point. The objection to this high melting point is that it makes the cream very rigid.

Whereas the o/w type of cream retains practically the same firmness in texture over a wide range of temperatures, the absorption base cream, having the same physical characteristics as butter, does not.

The structure of the w/o type of emulsion is a great deal dependent on the rigidity of the wax-oil phase. As soon as heat liquefies the mixture, separation occurs quite readily. We have found that a small percentage of magnesium salts, such as magnesium sulfate for example, does much to stabilize an absorption base cream.

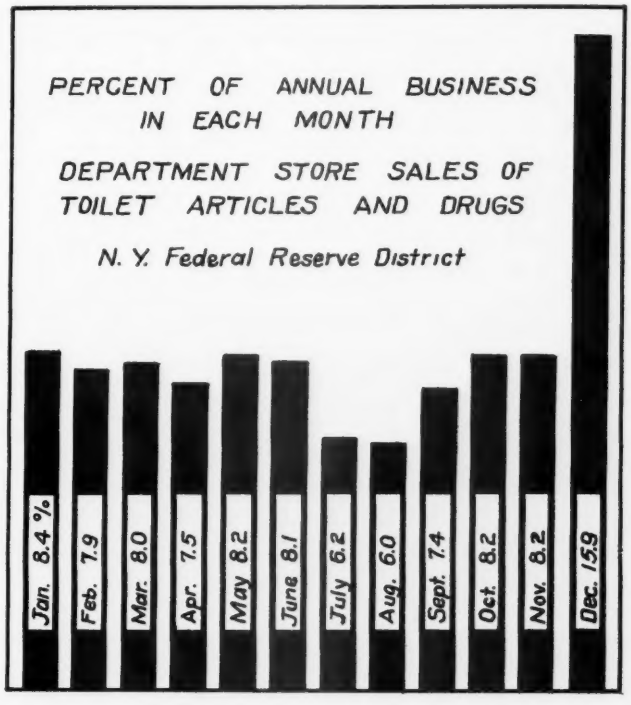
It is easily understood how the water globules in an absorption base cream are prevented from coming into contact with one another by the rigid wax-oil mixture surrounding them. Yet we have found from laboratory experience that if too much wax, such as paraffin, beeswax, and ceresine, are included in the continuous phase of an absorption base cream, that the emulsion tends to become crystallized, stiff, and brittle. Under these conditions, w/o creams are liable to separate much faster than if a viscous non-waxy phase were the surrounding layer. It is better therefore not to have too much wax included in the oil-wax base.

W/o creams of the absorption base type have few incompatibilities. If an excessive quantity of titanium and zinc oxide are milled into the cream, water will be thrown out. Again the addition of borax and glyceryl stearate emulsifiers will cause separation. For perma-

(Continued on page 42)

MONTHLY COSMETIC SALES

For some time now, The Drug and Cosmetic Industry has published index numbers derived from data supplied by the various Federal Reserve Banks. These refer to department store sales of toilet articles, preparations, and drugs and are not available as actual dollar values. Our first series of index numbers were corrected for seasonal variation and showed only actual trends, but it became apparent that interest in individual monthly sales was greater than in changes in trend, and adjustments were made accordingly.



We now amplify the data by a study of the proportion of of the total annual business that can be expected in each month. This naturally refers only to retail sales by department stores reporting to Federal Reserve Banks. This material is necessarily incomplete since it does not include other outlets but serves as a firm foundation upon which to base promotion plans.

Calculation of seasonal variation, separated from trends and irregular effects, is done by the link-relative method of Warren M. Persons. This information is given for the benefit of those who might wish to undertake the labor of checking our data or using these methods in other directions.

Empirically, manufacturers in this industry have long believed that certain months are preferable for the launching of extensive merchandising schemes. Only in periods when business is good can adequate return be expected on expensive promotions; In other words, if the investment of a certain amount in a campaign can be expected to increase sales during the period by, say, twenty per cent., then a period in which normal business is one hundred thousand dollars will result in a return of twenty thousand dollars additional, while a period normally yielding one hundred and fifty thousand dollars should be expected to show an increase of thirty thousand dollars. Since the pay-off in the balance sheet is on actual dollars of sales, not on percentages of increase, it is obviously better to spend money when best returns can be expected. This is an over-simplification of the case; we would all be delighted if we could know that a certain expenditure of promotion money would result in a given increase of sales; some businesses prefer to influence slack periods (but never decrease busy periods) in order to make an even production schedule throughout the year. But with an informed guess as to when sales can be expected to be better, at least one variable is removed and planning becomes just that much easier.

Working from basic data over an eleven year period from 1927, we find that on the average, and apart from trends that may exist within each year, department stores reporting to the New York Federal Reserve Bank did 8.4 per cent. of the year's sales of toilet articles and drugs in January, 7.9 per cent. in February, 8.0 per cent. in March, 7.5 per cent. in April, 8.2 per cent. in May, 8.1 per cent. in June, only 6.2 per cent. in July, 6.0 per cent. in August, 7.4 per cent. in September, 8.2 per cent. in October, 8.2 per cent. in November, and 15.9 per cent. in December.

We have known all along that December results in outstandingly greater sales than in any other month of the year, and had pretty well guessed that July and August were quite poor; it may be news, however, that January, followed by May are the best months after December, and are followed by October and November. This applies only to the calendar month, however, and need not apply to given periods within the month. As an example, February is an especially short month, with 28 calendar days, and is made even shorter by two holidays. If all months had the same number of actual selling days (30 day basis), the percentage of the annual volume would be 8.4 in January with 31 calendar days and one holiday, 9.1 in February with 28 calendar days and two holidays, 7.8 in March with 31 days, 7.6 in April with 30 days, 8.2 in May with 31 calendar days and one holiday, 8.1 in June with 30 days, 6.2 in July with 31 days and one holiday (but 7.1 on the basis that department stores close on Saturdays), 5.9 in August with 31 days (6.7 on the Saturday closing basis), 7.7 in September with 30 days and one holiday, 7.9 in October with 31 days, 8.4 in November with 30 days and one holiday, and 15.9 in December with 31 days and one holiday. These corrected totals can be brought to a one hundred per cent. basis for the year by a simple adjustment.

We can finally conclude that January exhibits the expected decline from peak Christmas sales, but is by no means a slow month, February is relatively a period of better business than the preceding month, March and April show successive declines, May an increase, sales decline from June to a low in August, and then steadily increase to their peak in December.

Since the only statistics that are clear cut are those that are manipulated to prove a point, these conclusions may have to be modified. If the general trend throughout a period is downward, then the months at the beginning of the period will show a higher than ordinary part of the total, while those at the end will show lower sales. The reverse is true in a time of increasing business. This can be taken into consideration, however, by a good statistical study.

Making Stable Creams

(Continued from page 40)

nent absorption base emulsions, it is necessary that thorough stirring be employed during the process, and the creams should be milled for best results. Indeed only in this manner can a fine textured cream be achieved. It may be of interest to note that creams of the oxycholesterin type require from two to three days to "set" even when they are milled quite cold.

The addition of water to an absorption base cream has a tendency to firm the emulsion and this effect is especially noticeable after water percentages of fifty per cent. are exceeded.

Absorption base creams should never be poured into jars while warm. If poured in this condition, the wax will crystallize and the cream will separate water.

Sometimes manufacturers of absorption base creams are bothered by separation around the sides of the opal containers. The cause is due to the fact that the jars leave the factory slightly alkaline. The condition may be corrected by rinsing them with a weak acid solution before filling.

When working with absorption base creams, we can usually tell if an insufficient amount of emulsifying agent is being used, mainly by the fact that the cream takes up no more water. Sometimes not enough oil is included in the formula and again the cream will not take up its portion of water. In most cases the addition of a small amount of oil will cause the cream to absorb the excess water. From fifteen to twenty per cent. of absorption base and about twenty per cent. of mineral oil having a viscosity of around 125 make a good combination for permanent oxycholesterin emulsions.

The Endocrine Compounds

(Continued from page 37)

cases has not yet been reached for the biological standardization of many of these compounds. It is not surprising then that the endocrine interrelationships may readily be conducive to therapeutic chaos.

Two of Zondek's fundamental hypotheses are worthy of quotation in this discussion. "Hormonal effect is not an absolute but a variable quantity, depending not least upon the momentary condition of the organ on which it acts—more especially, the physico-chemical condition of its cells. Functional and anatomical changes in endocrine glands should not always be regarded as the cause of disease, but in many cases the reaction of the glands to morbid processes located in certain other organs."

In passing, one may point out that the necessity of considering each patient separately is not limited to endocrine therapy. Ordinary doses of such drugs as digitalis, the members of the belladonna group, arsphenamine, and the sedative group often produce not only varying but at times dangerous effects. It is not surprising that precision of dosage in the cases of some of the newer endocrine compounds is still impossible.

The multitude of trade names has not assisted in clearing up the difficulties concerning correct dosage. Definite names and procedures of standardization should be agreed upon by the scientific workers in the

(Continued on page 53)

AMINO ACIDS AS THERAPEUTIC AGENTS

By M. A. LESSER

INVESTIGATIONS of the amino acids have never been entirely neglected. This was true even during the height of enthusiasm over other newer and more spectacular substances. It is only within recent years however, that impetus has been given to the study of these acids from the therapeutic angle. Much of this interest is due, perhaps, to the growing realization that the metabolism of these amino acids appears to be bound up with the action of such substances as the vitamins and particularly, the hormones. For instance, it is believed that the amino acid cystine is connected with the formation of insulin. There are many indications that arginine is associated in some way with the action of the parathyroid gland.[1] Several of the amino acids have been shown to increase the action of epinephrine.[2] It is because of these and similar observations, that the amino acids have become the object of increased study. The literature is replete with reports of experimental work, much of which has resulted in clinical trial and therapeutic acceptance. Other studies indicate interesting possibilities.

Chemically, the amino acids are divided into three groups, the neutral, the acid and the basic amino acids. These in turn are subdivided into other groups on the basis of their structure.[3] Physiologically, however, the twenty-two known amino acids are divided into only two groups, the essential or indispensable amino acids and the non-essential or dispensable amino acids. Some of these substances must be ingested since they cannot be synthesized by the body. The several authorities are not in full agreement as to the number of essential amino acids, but are in full accord regarding the need for certain of them. Not only are the amino acids required for the growth and maintenance of the body, but some are also concerned with the detoxifying processes. In therapeutics, both the essential and non-essential amino acids are used. Very often they are used in combination, not only with each other, but with adjunct agents. The acids so used are prepared either from natural sources or synthetically. Not all of the amino acids, however, have found therapeutic applications, but the number is fairly large considering the newness of this aspect of these substances. Among those finding application are cystine and its reduction product, cysteine; histidine and its derivative, histamine; glycine, glutamic acid, tryptophane, tyrosine and several others.

As pointed out in a previous article in this publication,[4] cystine is valuable as a sulphur-containing compound. As such it is intimately bound up with texture, type and amount of hair produced. The nails and other epidermal tissues are similarly bound up with cystine, which must be ingested since it cannot be synthesized by the body. This essential amino acid may be of value in the treatment of certain types of tumorous growths, and lack of this substance may be a causative factor in certain types of "fatty liver." From the cosmetic angle it has been indicated that cystine may be of value in increasing the growth of hair. Much work has been done in this direction. More recently, however, experimental and clinical work indicate that cystine may have a new important therapeutic role as a stimulant to lactation in mothers. At the Baltimore meeting of the Federation of American Societies for Experimental Biology in April 1938, Dr. R. G. Daggs of the University of Vermont reported that the administration of cystine enabled four mothers to nurse their infants, even though they had previously been incapable of doing so. This use of cystine to induce milk secretion, was based upon a large number of experiments on rats and then tried on humans. This offers a new concept of the possibilities of the use of amino acids.

From Europe[5] come reports of the employment of cystine in the treatment of certain metabolic disorders,

particularly those due to disturbances of the suprarenal function. Cystine is valuable in this connection, it is claimed, because it retards the oxidative processes of the body. Glycine and glutamic acid work similarly. Using this data, German chemists have produced a granular preparation containing these amino acids in combination with the sodium salt of vitamin C. This combination is recommended in exhaustion due to suprarenal disorders and in the course of acute infectious diseases.

Cysteine, formed by the reduction of cystine, has valuable indications of its own. By administering cysteine to hairless rats, Martin and Gardner[6] were able to induce growth of hair on these animals. The growth persisted as long as the rats received the cysteine. This work has much significance, but of course requires further study. The efficiency of cysteine hydrochloride in the treatment of certain types of plant galls, led a group of investigators at the University of California[7] to try injections of this salt into the tumors of rats. In every rat tumor injected, the tumor tissue narcotized rapidly and the skin healed normally over the ulcerated areas. After six months there was no evidence of recurrence. Further studies along the same lines are now being made in the hope of applying this treatment to humans.

Histidine, also reviewed recently in this journal,[8] has similarly found new uses. Histidine is an essential amino acid which has found wide usage, in the form of its hydrochloride, in the treatment of gastric and duodenal ulcers. Studies have shown this amino acid to be valuable in treating bronchiectasis, in lowering blood coagulation time and in the local treatment of skin lesions. The studies of Fontes and Thivalle have shown that the administration of a combination of copper, iron, and the amino acids, histidine and tryptophane are extremely valuable for the restitution of the iron reserves in cases of secondary anemia.[9] Another similar preparation is claimed by these workers to be superior to calf's liver in the treatment of this condition. A balanced mixture for treating this ailment as given by these authorities consists of l-tryptophane 2.5, l-histidine hydrochloride 5, globin 16, iron globinate 66, copper globinate 3.6 and manganese globinate 0.6 milligrams[10].

Histamine, reviewed with histidine,[8] is produced by decarboxylation of histidine. One histamine salt has been made official in the U.S.P. XI. Histamine salts are used as diagnostic agents in gastric ulcers, and in the study of blood circulation time. Therapeutically they find employment in the treatment of certain allergic conditions such as asthma and urticaria. Iontophoresis with histamine has proven of benefit in a number of conditions, including Raynaud's disease and Buerger's disease. Injections of solutions of histamine are used in treating rheumatism. The drug finds use in relieving pain in many conditions. The value of histamine has lately been reiterated by other observers. Weissenbach and Perles[11] gave intradermal injections of histamine dihydrochloride in cases of the contracture of rheumatism and chronic obliterating arthritis. Dosages must be adapted to the individual patients. Relief is achieved at once and persists for months,—eighteen months in one case and still going strong. Cain[12] has found injections of histamine very effective in relieving the severe itching of pruritis ani.

Glycine or glycocoll, chemically, aminoactic acid, has achieved a prominent place as a therapeutic agent. It is listed in the New and Non-official Remedies of the A.M.A.[13] Because of the possibility of confusing the amino acid name, glycine, with the trade name of a poisonous photographic agent known as "Glycin," the medical profession has been urged to use the name "glycocoll" when referring to amino acetic acid. The colorless, sweet crystals of glycocoll may be obtained by boiling gelatin or hippuric acid with hydrochloric acid or by the action of ammonia on monochloracetic acid. Although glycocoll is not considered an essential amino acid, it is important, physiologically, because of its wide adaptability by the detoxicating mechanism of the body. By far the most important use of glycocoll is in the treatment of myasthenia gravis. This condition is characterized by chronic progressive muscular weakness without atrophy (wasting) of the muscles. Strangely enough, gelatine which contains 25.5% of glycocoll appears to have no effect on this condition.[14] The glycine itself must be given. Mason[15] is of the opinion that usefulness of glycocoll is due to its effect on metabolism. Boothby,[16] one of the leading authorities on the treatment of this condition with glycocoll, points out that it makes a good deal of difference just how and when the glycocoll is given and that patience is needed. The treatments are given for quite a long time. He combines this glycocoll therapy with the use of small amounts of ephedrine. By this method he has achieved excellent results. Boothby's continuous checkup of his cases convinces him of the value of this type of amino acid treatment. Others employ glycocoll with prostigmine, an analogue of the alkaloid, physostigmine, in the treatment of myasthenia gravis. In evaluating these three agents, glycocoll, ephedrine and prostigmine, Mason[15] believes that best results are obtained with a combination of all of them, plus rest, exercise and diet regulation.

Glycocoll and prostigmine have been used in the treatment of a fairly rare disease known as adiposis dolorosa or Dercum's disease, characterized by adiposity, lack or loss of strength, pain and psychic disturbances. In two such cases the glycocoll combination resulted in "marked improvement." In the third case reported by Wohl and Pastor,[17] the use of this amino acid improved the general condition.

In the study of the influence of glycocoll upon some manifestations of diabetes, a group of Russian workers[18] noted a transient drop of the blood and urine sugar in several cases. Symptomatic improvement was noted in one case treated continuously for a long period with glycocoll. While not particularly significant, this type

of work is indicative of the growing interest in the amino acids in general. In Belgium, Michel[19] has shown that the intravenous injection of glycocoll is valuable in detecting hepatic (liver) lesions. In some instances the test is even more definite than the standard bilirubin determinations. Glycocoll has also found use in the therapy of nephritis, cardiac stasis and hepatic stasis. It is also employed in treating liver diseases, complicated by oliguria (deficient secretion of urine). Glycocoll enters into the composition of the antipyretics "Phenocoll," a combination of glycocoll and phenetidine and "Salocoll," a preparation of the amino acid and salicylic acid.[20] In general, glycocoll is indicated in such conditions as lack or loss of strength, or appetite, nervousness, loss of weight and underweight and in individuals who tire easily.

Glutamic acid (alpha-amino glutaric acid), though not essential to growth, is universally found as a constituent of protein, from which it may be obtained by hydrolysis. This amino acid is attracting much attention in the medical world and has already achieved several valuable uses. In 1934, Tripoli and Beard[21] treated various muscular dystrophies and atrophies with glutamic acid given by mouth. They preferred this acid to glycocoll, because it was cheaper (at the time), less toxic and more effective in forming creatin. They reported remarkable clinical improvements in fifty-one of sixty-nine cases. They also report improvement in other conditions including spinomuscular atrophy, psychopathic inferiority complex with loss of muscular tone from disuse, and other similar ailments.

A newer and more important use for glutamic acid, in the form of its hydrochloride, is in the therapy of achlorhydria, pernicious anemia and other conditions characterized by deficient acidity of the stomach. One group of investigators[22] found that glutamic acid hydrochloride in relatively small doses was much superior to diluted hydrochloric acid in restoring the normal gastric chemical processes in cases of anacidity. Wosika[23] made similar comparisons and arrived at similar conclusions. He showed, too, that the use of the amino acid offered several advantages in administration over hydrochloric acid. Nineteen patients, proven to be without stomach acid by histamine gastric analysis, were treated with glutamic acid hydrochloride. Eight of these cases were suffering from pernicious anemia. Good results were obtained with this regimen.

Lately, another salt of this amino acid has found acceptance as a diuretic.[5] A 23% solution of acid potassium glutamate is employed orally. It is claimed that the action of this preparation is essentially that of a potassium salt.

Although glutamic acid has long been used in the Orient, as a flavoring agent, and has found like uses in this country, it is now recommended as a substitute for table salt in certain conditions. In several abnormalities of the kidney function it is often desired to eliminate, as far as possible, ingestion of substances that yield the sodium, chlorine and bicarbonate ions. In selecting glutamic acid as a salt substitute, in a salt-free diet, Minizer[24] points out that the acid has several advantages. It has definite seasoning powers, resists air dampness, is harmless to the organism, is free from inorganic ions which disturb the impaired kidney, and is eliminated in a form readily managed by the kidney. Experimental work indicates that glutamic acid so used causes no pathologic changes in the kidney, urine or blood pressure. It is pointed out that the monosodium salt of glutamic acid has a seasoning effect seven times that of sodium chloride, but the d-glutamic acid is to be preferred for patients with renal disease, even though its seasoning capacity is less. Further experimental work, along similar lines is in progress.

The value of tryptophane, one of the essential amino acids, in the treatment of secondary anemia has already been mentioned in connection with histidine. Other experimenters have noted this blood making or regenerating power of tryptophane. These observers used the amino acid alone. It was found, however, that overdoses not only produced unwanted effects but also delayed reconstitution.[25] Levi[26] gave minute quantities of tryptophane, hypodermically, on alternate days for several months and obtained marked improvements in his experimental animals. Red blood cells and hemoglobin were caused to return to near the normal value by this treatment.

Another interesting indication for the use of tryptophane is shown by the work of Furth and Schall,[27] who by daily subcutaneous injections of small quantities of the substance, were able to greatly accelerate wound healing in dogs. None of the other amino acids similarly tried were as effective. Some were useless.

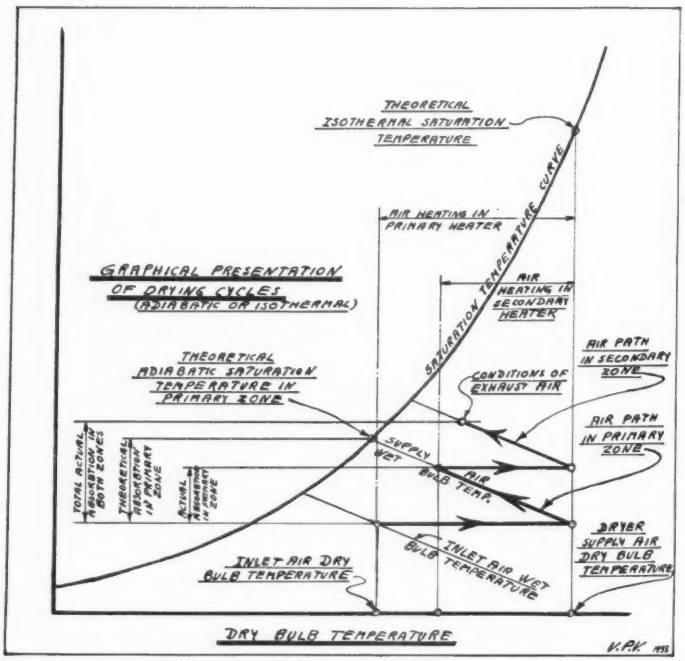
The dispensable amino acid, tyrosine is also coming up for its share of attention. It may be obtained by heating albuminoids with potassium hydroxide. One of its older uses is as a chemical vaccine in poisoning by vipers.[28] Studies of the principle in liver which is effective in treating pernicious anemia indicates that the therapeutic activity of liver extract depends upon the action of three accessory factors. One of these factors is tyrosine.[29] Jacobs[30] and his co-workers found that the oral administration of a "red mixture" derived from tyrosine caused a definite and characteristic stimulation to the hemopoietic (blood regenerating) system in a case of pernicious anemia. This experiment strongly suggests to Jacobs that there may be some antipernicious anemia principle in their tyrosine-tyrosinase substance. This work, too, requires more study before it can find general therapeutic uses.

Lysine, which is absolutely essential for growth, has not apparently as yet found therapeutic uses. However, it has been suggested that since lysine exerts a powerful influence in very small quantities, it may have definite effects on the internal secretory mechanism. In this connection the work of Pearson[31] on the effects of a lysine-deficient diet on the estrus cycle is interesting. He found that a diet deficient in this amino acid causes cessation of the estrus cycle in the rat. Restoration of

(*Continued on page 53*)

DRYING PRINCIPLES AND METHODS

By V. P. VICTOR, M.E.


THEORETICAL ISOTHERMAL SATURATION TEMPERATURE
AIR HEATING IN PRIMARY HEATER
SATURATION TEMPERATURE CURVE
GRAPHICAL PRESENTATION OF DRYING CYCLES (ADIABATIC OR ISOTHERMAL)
AIR HEATING IN SECONDARY HEATER
THEORETICAL ADIABATIC SATURATION TEMPERATURE IN PRIMARY ZONE
AIR PATH IN SECONDARY ZONE
CONDITIONS OF EXHAUST AIR
AIR PATH IN PRIMARY ZONE
TOTAL ACTUAL SATURATION IN BOTH ZONES
THEORETICAL ADIABATIC SATURATION IN PRIMARY ZONE
ACTUAL ADIABATIC SATURATION IN PRIMARY ZONE
SUPPLY WET BULB TEMP.
DRYER SUPPLY AIR DRY BULB TEMPERATURE
INLET AIR WET BULB TEMPERATURE
INLET AIR DRY BULB TEMPERATURE
DRY BULB TEMPERATURE
V.P.V.

MANY treatises and books have been written on this subject. The majority of these various efforts involve highly abstract and complicated data, and, hence, are of little value to practical men.

Drying, as the name implies, consists of the removal of a volatile liquid, usually water, from either solid, liquids or gaseous matter.

However, the term "drying" usually designates the removal of water from solid or semi-solid materials. The elimination of volatile liquid from a fluid mass or liquid is called evaporation. If the removed vapors are condensed, the process is called dehumidification or dehydration, whereas the separation or removal of solvents, odors, or any other vapor is recognized as baking, purification, oxidation, and recovery.

Whenever there is a large amount of free liquid present in the material to be dried but not in the form of a chemical solution, mechanical rather than thermal means for separation and elimination of this liquid are employed. Centrifugal, gravity, pressure, and impact forces are utilized in methods known as centrifuging, settling, filtration, pressing and baffling.

Regardless of the method, two basis phases are encountered in a drying process, namely—the separation of the media to be eliminated from the material to be dried, and the removal of the separated media. The first step is usually accomplished thermally or by addition of heat. It is, however, quite surprising to notice how many designs of dryers either completely or partially neglect the second important phase.

Inasmuch as in by far the greatest majority of cases water is the media to be eliminated as well as for the sake of brevity, our discussion will be restricted only to drying of water from solid materials. In industry there seems to be present an almost infinite variety of drying methods and cycles as inferred by an appalling number of descriptive terms.

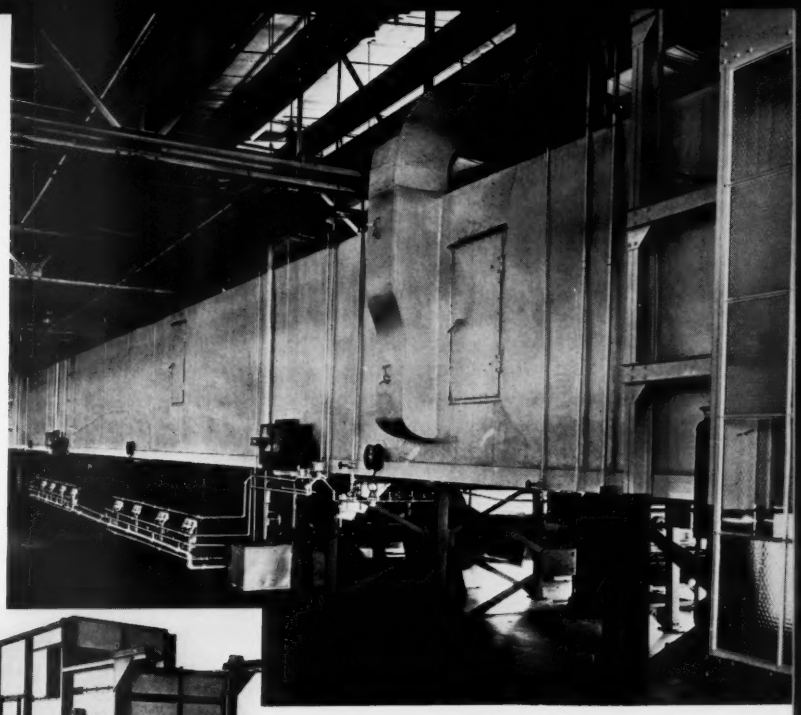
At present there are five major dryer classifications which are based on:

(1) Shape or form of material to be dried, such as pills, salts, granulations, powder, paste, blocks, boards, sheets, etc.

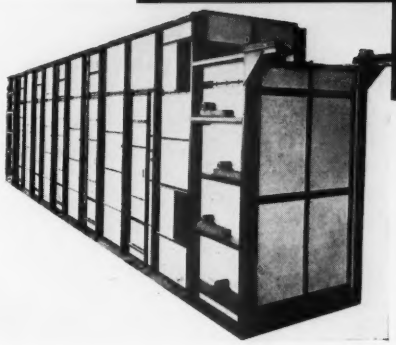
(2) Method of material handling whether continuous or intermittent, such as single or multiple pass conveyor, monorail, cross bar, festoon, rotary drum, continuous web or sheet, cascade, spray, bucket, truck, tray, batch, etc.

(3) Type of dryer construction, such as tunnel, tower, cylinder, inclined entry horizontal type, box, cabinet, compartment, and others.

(4) Method of furnishing the heat or means for conversion of water into vapor form-radiation, direct con-



At the right is shown a general view of a high temperature drying system with oil fired heaters. Just below is shown a five pass belt conveyor type dryer. At the bottom of the page is shown a four compartment tray dryer.



tact or conduction, free or forced air convection, electric induction, vacuum, and flash-off.

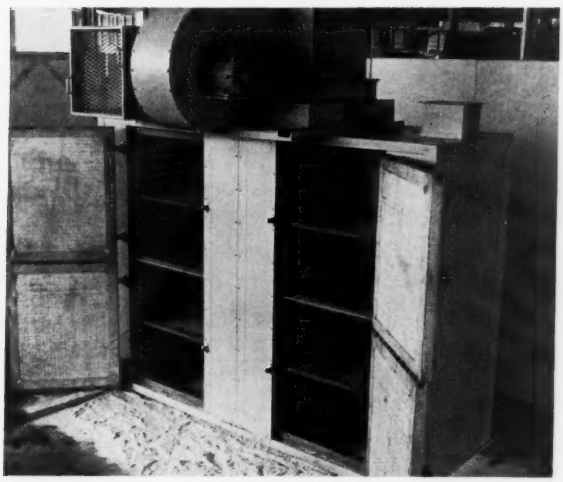
(5) Design of air distributing means, such as high or low velocity, supply air nozzles, counterflow, reversible air flow, deflection or reflection, air float or layer, recirculation, directional baffles, plenum chamber, etc.

In addition, there is an impressive array of trade names intended primarily to stress certain design or performance features.

In spite of this excessively voluminous nomenclature and a substantial number of dryer types, the fundamental principles underlying the design of various systems are few.

As previously pointed out, for separation purposes water is first converted from a liquid into a gaseous state or vapor. In order to make possible this transformation, latent heat of evaporation must be available and is usually provided by means of heating devices.

Regardless of possible dryer classifications there are only two basic methods of furnishing the required heat, namely —by maintaining approximately a constant temperature in the dryer proper or of the material to be dried or by circulating through the dryer a heat supplying and at the same time vapor removing media such as air or the products of combustion.



The first cycle is known as isothermal and the second as adiabatic.

Heat transfer in an isothermal dryer may be accomplished by:

(a) Radiation accompanied by either a slight movement of air due to internal or free convection, or accompanied by somewhat stronger air currents, produced by a fan located in the dryer proper, and by

(b) Conduction or direct contact of material to be dried with hot surfaces, as well as the heating of metallic parts by electric induction.

Vacuum dryers of solids and vacuum dryers of liquids (evaporators) when operating under a constant temperature in the chamber also approach the isothermal cycle.

In actual practice these heaters consist of hot pipes, ducts, plates or any other heated surfaces located either adjacent to the dried material or forming a direct contact with it.

The heating in adiabatic dryers is performed by air which has been previously heated and tempered to suit drying conditions in an externally located apparatus.

The principal advantages of the isothermal drying cycle are as follows: Lower initial cost; smaller power consumption; reduced size of equipment; higher drying temperatures when using the same heating media than in the adiabatic type; smaller volumes of exhaust air or

spill; and in case of direct contact types—a higher moisture removing capacity and efficiency.

In properly designed adiabatic dryers benefits can be derived from the following features:

Maintenance of uniform temperature and humidity throughout the dryer due to a large and positively controlled air circulation; drying of material at a uniform rate regardless of its physical location in the drying chamber; elimination of danger of subjecting the goods to excessive temperatures; and a considerably reduced drying time when compared with the radiation type with free air convection.

From the thermodynamic or heat flow point of view these cycles have the following characteristics:

In the isothermal radiation type air is maintained for all practical purposes at a constant temperature. Moisture evaporated from the material is absorbed by the surrounding air and causes its wet bulb and dew point temperatures to rise. Inasmuch as the heating capacity of radiation and similar type heaters is somewhat small, only a limited volume of air can be exhausted without considerably impairing drying conditions and temperature. The dry bulb temperature of air could also be reduced by a sudden influx of moisture. Obviously, the moisture content or absolute humidity of the air in the isothermal dryer tends to be high, thus increasing the drying time. Spill, or amount of exhaust air carrying away the vapor must be carefully adjusted for best results.

In a dryer of the adiabatic type, as the term implies, the heat content remains constant. After the material has been heated there is a constant but comparatively small heat demand to offset the losses through the dryer housing walls, conveyer, etc. The wet bulb temperatures of the supply and return air are practically the same, hence the name adiabatic.

However, air in passing through the dryer absorbs or picks up a certain amount of moisture. The corresponding increase in the dew point temperature at a constant wet bulb temperature is accompanied by a reduction in the dry bulb temperature. Absorption or pickup of one grain of moisture by one cubic foot of air causes approximately 8½° reduction in the dry bulb temperature. The pick up, usually expressed in grains per cubic foot, varies from one-half to eight grains per single pass of air through the dryer, the magnitude depending upon a great many variables. In isothermal dryers this pickup may be as high as 25 grains per cubic foot of air, or roughly 350 grains per one pound of air.

Assuming one hundred per cent. drying efficiency, the air leaving the dryer will be in a saturated state, and in the case of adiabatic dryer at approximately its initial wet bulb temperature. Thus the maximum moisture carrying capacity of air depends upon the difference in the dew point temperature of supply air and that of its maximum saturation or corresponding to its initial wet bulb temperature.

This difference can be increased by either reducing the initial moisture content by dehumidifying the supply air, or by increasing the initial wet bulb temperature by heating the supply air to a higher dry bulb temperature or both.

The drying temperature and the reduction in the initial moisture content of the supply air are limited by possible discoloration of goods, case-hardening, shrinkage, disintegration, as well as by the temperature of available heating media, and the practicability from an economic point of view. The drying efficiency or the ratio of actual pick up to a maximum theoretical pickup (the latter usually called grain deficiency) seldom exceeds 70% and in a majority of cases is in the vicinity of 35%.

There seems to be present a great difference of opinion as far as drying at temperatures in excess of 212° F. is concerned.

The general data outlined above holds true for any temperature with the following limitations.

At atmospheric pressure, as pointed out in the previous article, it is impossible to obtain a dew point temperature exceeding 212° F. Therefore, regardless of actual wet bulb temperature, the grain deficiency in drying computations should be based on dew point temperatures only approximating 200° F. It is of interest to note that under average conditions the wet bulb temperature corresponding to the dry bulb temperature of air at 800° F. to 1000° F. seldom exceeds 150° F. to 190° F.

In general, at these elevated temperatures in the interest of economy, staging or sub-division of drying operation into several zones is essential.

Each zone may handle large volumes of air, but only a small portion of it is taken in originally from the outside, passed through all zones in counterflow direction to the goods, and finally rejected back to outside.

If exhaust air contains large amounts of heat, economizers or heat recovery apparatus should be used. This statement holds especially true for cold climates where it is quite customary to preheat the makeup air in an indirect heat interchanger by the spill or exhaust air. In a similar way feed water for boilers or process work could be preheated.

The drying rate in isothermal and adiabatic cycles depends upon a large number of variables, such as permissible temperatures and air velocities, porosity and structure of the material, amount of exposed surface of the material, susceptibility to case-hardening, warping, etc. Fundamentally, there are three stages or periods during which the material to be dried is subjected to certain changes, as follows:

1. The heating up or adjustment stage. Material and moisture are brought up to the drying temperature and a certain amount of water is evaporated during this period at a somewhat varying rate.

2. The constant rate stage. The moisture is removed at an approximately constant rate from the wet surfaces of the material. The solid continues to give up its moisture and thus assumes a temperature equal or

slightly higher than the wet bulb temperature of the circulated air.

In isothermal dryers, due to the effects of direct radiation, the material is maintained at a considerably higher temperature than the surrounding air.

This stage terminates when the surface of the material begins to dry out due to the fact that moisture is removed faster than it comes to the exposed surface. This change in the drying cycle is called the "critical moisture content." Obviously, due to the drying out of the surface, the drying rate decreases.

3. The unsaturated (partially wet) surface drying stage continues until all of the surface is dry. This period is also sometimes referred to as that of "uniform falling rate." However, the decrease in the drying rate is not necessarily uniform or constant. At this time the material will gradually rise in temperature until the dry bulb temperature of the surrounding or circulated air is reached.

As soon as the surface is dry, the moisture then begins to diffuse from the interior to the surface.

4. The subsurface drying stage continues at a gradually decreasing moisture removal rate until equilibrium is established with the surrounding or circulated air. This period is also called "varying falling rate period."

In order to further dry the material the "equilibrium moisture content point" is lowered by decreasing the vapor pressure of the air, or in other words, by utilization of dehumidified air.

Care should be exercised not to allow the material to regain the moisture after its removal from the drying chamber by exposure to unconditioned air possessing higher vapor pressure.

Also, when dealing with hygroscopic or chemically combined moisture one must take into consideration the possibility of changes in the physical structure of the material, such as warping, hardening, shrinkage, cracking, etc.

It is of interest to note that the first three stages depend essentially upon the proper drying temperature, humidity, air circulation, and the removal of evaporated moisture. The ability to accomplish the desired results in the last stage is primarily a matter of difference in vapor pressures, whereas air circulation and temperature become of secondary importance.

Vacuum drying is a typical illustration of the last stage.

Depending upon the type of material, as well as the extent of required drying, some of the above outlined stages may not take place at all.

As a rule, it is very impractical to design drying installations and controls to automatically alter the conditions in the drying chamber to suit the various periods. The usual practice is to either use separate chambers for preliminary or subsequent treatments, or to design a single system for the average requirements of drying stages.

The drying apparatus and the methods of handling the materials have unlimited possibilities from an application or construction point of view and need not be discussed here.

However, in the past few years, as a matter of interest, a number of dryers have been placed in very successful operation. These dryers seemingly contradict all theories and conceptions of orthodox drying methods. Moisture is allowed to accumulate in the drying chamber causing the maintenance of a very high humidity, and, hence, vapor pressure. Such conditions would retard if not completely prevent the occurrence of the drying cycle and its component stages. The exhaust of this moisture laden air is either completely absent or is exceptionally small, thus maintaining one hundred per cent. recirculation and reheating of air. Yet, the dryers work very satisfactorily.

These systems, usually of continuous nature, are called either "flush-off type" dryers or "superheated steam" dryers, and are noted for their compactness and low manufacturing cost.

Many an expert has been reticent or unwilling to advance a definite explanation of the above somewhat unusual phenomena.

The possible explanation presented below so far has successfully met all thermodynamic and practical considerations.

The dryer proper is in reality a treating chamber in which the material is brought up to practically the maintained dry bulb temperature. The moisture in the material has been also converted into vapor state, but due to high vapor pressure in the chamber the majority of it remains in the material. As soon as the material leaves the chamber and is exposed to low vapor pressure air, the moisture already in vapor form leaves the material or flashes-off almost instantaneously. The extent of its liberation being governed by previously outlined equilibrium moisture content condition.

The name "superheated steam" dryer came from the fact that at high dew point temperature (in the vicinity of 150° F. to 190° F.) air occupies considerably less space than the water vapor.

In their performance these so-called dryers are similar to the vacuum type dryers with the exception that in the latter case the moisture flash-off is accompanied by the reduction in the temperature of the solid. This is due to the conversion of sensible heat content of the solids into the latent heat of evaporation.

Additional heat must be furnished to assist drying under the vacuum and in extreme cases to prevent freezing of the material.

However, the flash-off dryers have their limitations and are not applicable to drying of certain materials. They should be properly classified as isothermal treating chambers and not dryers.

WATER PURIFICATION

WATER is such a powerful solvent that pure water does not exist in nature. Water from wells is likely to be high in heavy metals, gas and chemicals. Water from streams and reservoirs will be high in suspended matter of both an organic and inorganic nature. Because of these conditions water is highly variable from season to season, especially when it is drawn, as most of it is, from reservoirs. During periods of heavy rains surface water will increase the amount of suspended matter in the streams which feed the reservoirs. At such times color and odor characteristics will change very definitely. During periods of drought when the streams are being fed by sub-surface or ground water, the dissolved mineral content of water will run high.

These changes in characteristics are mentioned simply to indicate that the chemical constitution of the industry's most important solvent changes periodically, a factor which more than anything else accounts for sudden, inexplicable changes in the color, taste or odor of finished products. Recently a manufacturer of fluid extract of cascara was worried by the fact that his preparation had developed an off color, a peculiar taste and a heavier precipitate. No change having been made either in the quality of the bark or in the manufacturing process, there could be but one answer, the water, which proved to be correct. Investigation quickly revealed that because of a threatened epidemic the local water company had increased the chlorine charge considerably.

City water, that is to say drinking water, and industrial water are two very different things. Because water is good to drink and perfectly clear is no criterion of its value for industrial consumption. City water plants have only two objects: to kill bacteria in the water; to clarify it. Therefore it is essential to treat water in order to standardize it before use in manufacture. The standardization of water has an incidental benefit in plants which make their own steam because the character of boiler water directly influences boiler efficiency and hence the cost per pound of producing steam. Calcium and magnesium compounds, which are present in practically all water, have the characteristic of precipitating out of water which has been heated, hence, the formation of boiler scale. Now add to these chemical compounds a touch of colloidal silica which also is present in untreated water and the boiler scale becomes as hard as porcelain, and in consequence, an effective inhibitor of heat transfer in the boiler tubes. Boiler scale may decrease boiler efficiency in excess of thirty per cent. not to mention frequent tube cleaning and replacement.

No water treatment with the exception of distillation is completely effective at all times because of the varying character of the water supply. Distillation is, however, prohibitively expensive when considered for all industrial water uses. Therefore, for ordinary purposes we are forced to rely upon treated water. Since a water still is simply a special type of boiler fitted with condensing equipment, that portion of the water which we propose to distill should first be treated in order to promote the operating efficiency of the still and its condensers as well.

Therefore every plant should be equipped to treat all the water coming into it. While it requires considerable study over a period of at least a year to discover what one must expect, the seasonal characteristics of water in any given water shed will remain fairly constant. The chemical constituents of the ground water will depend upon the geology of the region. In regions where the older crystalline rock prevails, such as in New York and the New England states, the ground water is likely to be of low concentration and relatively free from hardness. Basalts and rhyolites such as one finds in the western part of the country will influence the chemical concentration of the ground water and also an increase in the sulphate content will be noted. Water from limestone and dolomite regions will be very hard. Water from sedimentary rock will still be different, particularly in chemical concentration. Shales and sandstones influence water in still another manner.

Since the geological character of any region is fairly consistent over a wide area one may expect the water concentration to run fairly uniform. Similarly the water table influences the vegetation of particular regions and the vegetation, especially during periods of heavy rain and floods influences the color and often the

By FRANCIS CHILSON

taste of water. In hardwood regions for instance one may look in flood periods for a high concentration of tannins.

The point we wish to make here is that the water supply for a given region will follow fairly regular seasonal curves with respect to the impurities carried either in suspension or solution. One cannot, however, rely too much upon this fact for in times of great floods such as we had last year vast quantities of water flow from one water shed to another and from region to region. Under such conditions the chemist is likely to be required to run a continuous check on incoming water and to adjust treatment procedures accordingly.

As a start the local water companies can provide analysis tables over long periods of time. These will give a clue to the type of water treatment required. But in any case the primary conditions which influence finished products most can be met through the use of activated carbon: These conditions are color, taste, odor. Activated carbon will remove color whether it comes from iron or extracted vegetable matter. It will remove odors whether from pollution or chlorine. It will remove tastes from whatever cause. Activated carbon is not however a universal treatment; it is simply an important adjunct, possibly the most important adjunct, in a water treatment system.

In setting up activated carbon equipment one should remember to place the carbon unit in the line *after* the water has been treated to remove other impurities for the reason that the carbon granules will become coated with colloidal matter and the effectiveness of the treatment will thereby be reduced. Still another important element is to place a filter after the carbon unit to safeguard against carrying over fine particles of carbon in the treated water. This would not cause in difficulties except in the preparation of which products such as creams, emulsions, milk of magnesia. A very compact unit consisting of carbon cylinders, and after filter is made by a well-known filter co. A complete water treatment plant consist of tanks for chemical treatment commonly called precipitation or coagulating tanks; sand filters; carbon filters and an after filter. It has been suggested that theoretically water can be treated so as to remove all impurities of whatever nature and in effect to produce water equivalent to distilled water by means of chemical and physical treatments. But the variability of water and the complications of procedure and equipment precludes practical development of such a theory.

Water distillation is still the final stage in the production of pure water. Treated water can reach a stage of perfection and standardization that will meet the majority of requirements, but distillation is required for the practical removal of residual impurities. In this connection it is well to remember that as water is purified its solvent power increases. It is for this reason that great care must be taken in the design of apparatus and holding vessels. A short time ago a flavor manufacture was picked up because his product contained lead—an unheard of possibility. An investigation revealed that a leak in a pure block tin pipe leading to the distilled water storage tank had been repaired with solder that was half lead. This is an indication of the speed with which distilled water will pick up metallic contamination.

Very few plants have adequate water treating systems. Some go to the expense of distilling water when properly treated water will suffice. In a few instances we have seen distilled water carried so long in storage that its purity was highly questionable.

Never in our experience have we been connected with a plant that did not have product difficulties which eventually were traced to impurities of one kind or other in the water supply. In view of the fact that such troubles come up almost continually it would seem that special effort to standardize water would be made. But this is rarely the case. As soon as one difficulty is ironed out and provision made to overcome it, the water problem is forgotten until another difficulty crops up elsewhere.

One cannot establish a water treatment procedure or set up water treating equipment and then forget about it. Water is an important raw material and it should be treated as such; in other words it should be made to conform to specifications before being used.

New Drug Act

(*Continued from page 31*)

these suggestions and criticisms, yet Dr. Dunbar does not see why there should be any hard feeling between Department and the groups concerned. No definite action under the law was expected to be taken until after the return of Walter G. Campbell, FDA Chief, from the Pacific Coast in mid-July.

The new law repeals the original federal food and drug law. At the same time many of the provisions of the latter will be renewed, in effect, in the new act. Under such circumstances it is believed that the advantage or benefit of court decisions under the old law will not be lost. On the other hand, they will serve as judicial precedents in interpretation of similar provisions under the new law. Completion of food, drug and cosmetic legislation this summer is considered advantageous by drug trade representatives because they point out that the legislatures of 43 states will be meeting during 1939. Those bodies will have before them the new federal law, to serve as a guide in enacting new state laws. State officials will also have the new law available as a guide in drafting new regulations. There has been a disposition among state regulatory officials and state legislators during the last year or two not to wait any more on Congress to pass federal food, drug and cosmetic legislation. They have been getting impatient and the result is that some rather wild laws have been passed in some states and wilder bills have been introduced in many legislatures.

The new law will be beneficial on the whole to the legitimate drug and cosmetic trades, according to the judgment of Washington. The law, it is said, will enable FDA to reach more or less illegitimate competitors who have been skating around the edges of the old law, knowingly interfering with legitimate business and in some instances, by competitive methods, forcing other manufacturers to draw the long bow in their label claims, advertising, etc.

One of the important features of the new act is to place cosmetics, except toilet soaps, for the first time under federal regulation. Heretofore they have been touched by FDA only where therapeutic claims have been made for them, in which instances they have been classed as drugs. Under the cosmetic provisions of the new law, the entire field of beauty preparations comes under federal control. An important class of these products includes face bleaches, bleaching powders, etc., which contain mercury, arsenic or other dangerous ingredients for which no therapeutic claims have been made. All such products heretofore have been beyond federal reach.

The law requires statement of active ingredients of nonofficial drug products to be shown on their labels. This may be difficult for some manufacturers, especially in the proprietary line, to get accustomed to. In the case of products containing potent drugs, the quantity of such ingredients must be stated on the label, whether they are considered active or not. Although this is an important change in the law, doubt is expressed in well informed quarters that it will result in affecting sales.

The new law requires a more complete statement of directions for use and dosage. Under this provision it will not be permissible for a manufacturer to say to take one of his pills and then repeat the dose every half hour. It will apparently be necessary for him to be more specific and, in the case of potent or dangerous drugs, he will probably have to state the maximum limitation within which his product may be taken, for example, not more than so many doses in 24 hours. This requirement will particularly affect headache remedies, pain relievers, and the like.

The law prohibits labeling of drugs that is false or misleading in any particular. Formerly it was necessary for the Department to prove that a false or misleading label statement was knowingly made. This was very difficult to do in some cases. This new provision is regarded as beneficial to legitimate manufacturers.

Provision is made for federal inspection of food, drug and cosmetic factories. Inspection was not provided for specifically under the old law, although inspection of many factories has been permitted in practice. If a manufacturer objects to inspection of his plant, laboratories, warehouses, etc., the courts may require him to permit such inspection by qualified agents of FDA.

As Secretary Wallace has pointed out, the new act contains positive requirements for informative labeling in the interest of consumers in addition to negative prohibitions against mislabeling contained in the old law. Drugs used in diagnosis of disease are put under control, also drugs used in slenderizing or to remedy underweight conditions. Habit-forming drugs must be labeled with a warning, and the list of narcotic or hypnotic drugs specified may be expanded by the Department to include derivatives of many known substances named in the act. Special precautionary labeling is required for drugs liable to deterioration.

The Homeopathic Pharmacopoeia is set up as the legal standard for drugs used by that school of medicine. Official drugs must be packaged and labeled as prescribed by the Pharmacopoeia and National Formulary. Official drugs are required to reveal on their labels differences of strength, quality or purity from the official standards. Non-official drugs are declared illegal if the standard of strength differs from the standard claimed for them. Antiseptics must possess germicidal power. Traffic in drugs and cosmetics prepared or handled under insanitary conditions that may contaminate them or render them injurious is prohibited. Use of containers that may render the contents injurious to health and use of slack filled packages is also prohibited.

The multiple seizure provision of the law was the subject of long controversy in Congress. It appears that unlimited multiple seizure of adultered drugs is permissible, but seizure of misbranded drugs is limited to a single interstate shipment, unless the misbranding has

been previously condemned in a court decision or unless the misbranded article is dangerous to health or its labeling is fraudulent or materially misleading to the injury or damage of the consumer. Consolidation of multiple seizure cases is permitted for trial in a Federal District Court agreed upon by the government and the shipper or owner. If such agreement is not reached, the court for the district where seizure is made shall, upon application of the shipper or owner, specify a district of reasonable proximity to his principal place of business in which the case will be tried.

Increased penalties for violation of the act are provided for and federal courts are authorized to restrain violations by injunction.

While the Wheeler-Lea law amending the Federal Trade Commission Act recently assigned the regulation of advertising of food, drugs, cosmetic, and devices to the FTC, thus eliminating a highly controversial feature of the fight over food and drug legislation, drug manufacturers have been advised to watch for possible developments growing out of a recent decision of the Federal Court for the 9th Circuit in the Alberti case, in California, under which it was held that collateral advertising of drugs can be used as evidence in FDA cases to interpret the meaning of labeled statements. If this ruling is appealed to and upheld by the United States Supreme Court, the apparent effect may be to tie up administration of the new food and drug act quite closely with administration of the Wheeler-Lea Act.

Amino Acids

(*Continued from page 45*)

this substance, in the form of 0.6% of d-lysine dihydrochloride, to the diet, restores the cycle. It is apparent that a deficiency of lysine caused this cyclic change. Work of a similar nature, on other endocrine-controlled functions, should yield interesting and valuable data from both the physiologic and therapeutic angles.

Most of the amino acids are receiving intensive investigation, both here and abroad. While much of this work is purely physiological, a good deal of it points definitely to possibilities of employing these substances in therapeutics. Lustig and Wachtel[32] for instance, have shown that almost all the amino acids have some anti-carcinogenic action either *in vitro* or *in vivo*. Others[33] have similarly found amino acids beneficial in treating tumors and cancerous growths. Castex and Re[34] have shown that there is an increase in the amino acid content of the blood in cases of cancer, fevers (especially malaria), chloroform poisoning, in various leukemias and many types of hepatic insufficiencies. It is possible that these increases may be part of the body's responsive defense mechanism against these abnormalities. In some of these conditions, other workers have found, since, that the use of certain amino acids are beneficial.

Other research men have made efforts to utilize the detoxifying action of some of the amino acids in combination with poisonous, yet therapeutically effective, drugs.[35] The efforts have not always been successful, but in this way, they hope not only to lessen the dangers involved in the use of such agents, but to increase the therapeutic efficiency of the medication as well.

Another factor which makes for caution in applying the amino acids in therapeutics is the danger element involved. While some of them are quite safe to use, others, frequently, the most effective ones, require extreme care in both preparation and administration. Among these may be listed histidine, tyrosine and tryptophane. Very small amounts of these amino acids may cause considerable damage to the kidneys.[36] Histamine from histadine, while one of the most valuable of the amino acid derivatives, requires extreme caution when employed to avoid dangerous shock. Overdoses of tryptophane, as has been mentioned, may undo its own beneficial work.

Nevertheless, the studies of the amino acids have already given the medical world many new, valuable agents in the constant war against disease. There is every indication that therapy with the amino acids shall continue to enlarge in scope and in effectiveness.

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The Endocrine Compounds

(*Continued from page 42*)

field of endocrinology, and then manufacturing firms should be compelled by law to use these names and methods of standardization in labeling their products and the assay value of each. Of course, they should be granted the right to add any special designation of their own.

(*To be continued*)

MERCHANDISING NEWS

THE COSMETIC TREND: One may apparently expect a revival this Winter of the demand for the heavier scents in perfumes, and a drift to bouquets, featuring jasmin, geranium, lilac, rose and other seventeenth century bases, including the moderate use of musk, civet, etc.

More powder most likely will be used than last year in view of the greater bodily expanse, provided by the bare shoulders, arms and necks of formal dress fashions, and a corresponding demand is expected for liquid make-up.

Much depends, of course, upon the manner in which the American women will trail along with the Paris lead. Dress makers believe that they will do so thoroughly, at least during the Winter, in view of the fact that the Louis the Fourteenth vogue is in reality little but an extention of the dirndle fashion of today.

More attention will be paid to make-up than ever and the drift is to the greatest possible detail in personal appearance. No clearly visible shade tendency has developed at this time, but most fashion writers seem to think that darker shades are indicated than the present ones, at least for the evening. Buyers apparently do not expect any difficulty in making up their assortments for lipsticks, rouges and make-up generally, but the chance of a real break either just before Christmas or possibly in the late winter is not entirely excluded.

The present situation resembles in many respects that of the few years, following the war, which in turn was succeeded by the biggest forward push that the cosmetic industry has witnessed during its history. If the analogy is correct, this winter may provide the end of one period, with the New York World's Fair marking the start of the next. Indications are that the new course will be set by the American industry this time and that nothing, that may happen in Europe in the meantime, can materially interfere with its progress.

CONSUMER ANALYSIS: The fifteenth edition of the Milwaukee "Journal's" Consumer Analysis of Greater Milwaukee, reviewing the buying habits of 190,196 families in that market, contains considerable material of interest to drug and cosmetic manufacturers.

It reaches the conclusion that electric razors are now used by 31,402 or 11.8 per cent. of Milwaukee men, as compared to 19,049 or 72. per cent. in 1937. Which means that over 12,000 men in that market acquired an electric razor during the year. Of this number, the "Journal estimates that 8,000 went to Schick, about 1800 to Packard. These two brands lead with 72.1 per cent. and 20.1 per cent. of Milwaukee's male users respectively.

During the same period, although the popularity of safety razors was appreciably reduced, the use of shaving creams declined surprisingly little. It was found that 47.9 per cent. of men used a regular shaving cream during 1938 as compared with 48.7 per cent. in 1937, while the percentage of brushless shaving cream users remained the same as during the previous year, 18.5 per cent. Of the regular creams, Palmolive and Lifebuoy are preferred brands with 39.5 per cent. and 24.8 per cent. respectively. Among the brushless shaves, Burma Shave leads with 22.8 per cent., followed by Molle, 16.4 per cent.; Barbasol, 15.6 per cent., and Palmolive, 12.9 per cent.

The use of mouth wash by Milwaukee families has held fairly steady at about 59 per cent. during the past three years. Listerine, which has been the consistent favorite, retains its leadership and shows a gain from 47.1 per cent. of all users to 51.5 per cent. in 1938.

"While tooth paste has been on the downgrade in the Greater Milwaukee Market," according to the analysis," tooth powder has been making steady gains in consumer use. Almost six out of ten families, 57.3 per cent.,

use tooth powder this year as compared with 52.9 per cent. in 1937. This represents a gain of over 9,000 families. Dr. Lyons is the overwhelming favorite with 59.6 of all users preferring that brand.

"Tooth paste continued its downward trend this year with 65 per cent. of all families buying this product, compared with 67.9 per cent. in 1937. From a high of 169,630 families in 1934, the number of tooth paste users has dropped to 123,627 families this year." The brand leaders are Colgate, 18.8 per cent.; Pepsodent, 17.9 per cent.; and Ipana, 16.6 per cent.

In one year the total use of liquid shampoo made a phenomenal growth from 74,130 or 39.4 per cent. of all families to 90,914 or 47.8 per cent. of all families. "Drene, the number one brand added almost 23,000 families to its list of users this year. From 28.8 per cent. consumer popularity in 1937, Drene leaped to 48.7 per cent. in 1938." J. R. Watkins continues in second place although dropping from 17.3 per cent. in 1937 to 15.6 per cent. in 1938.

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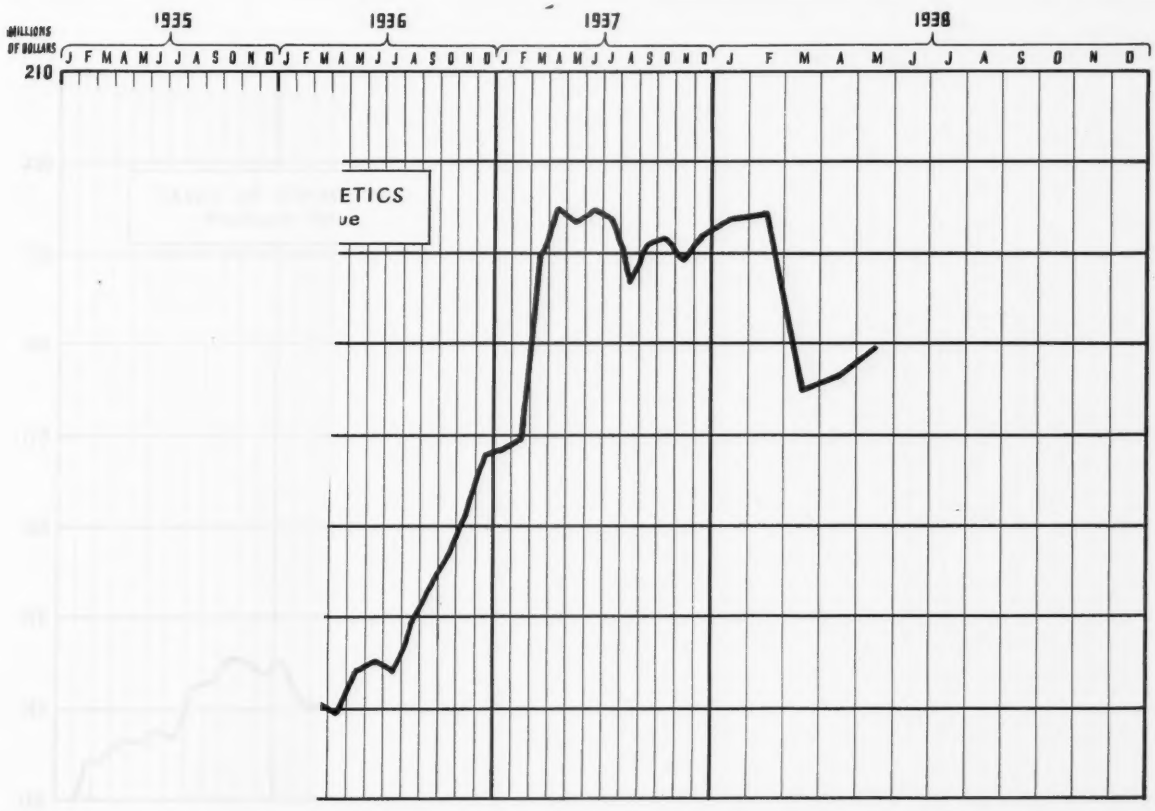

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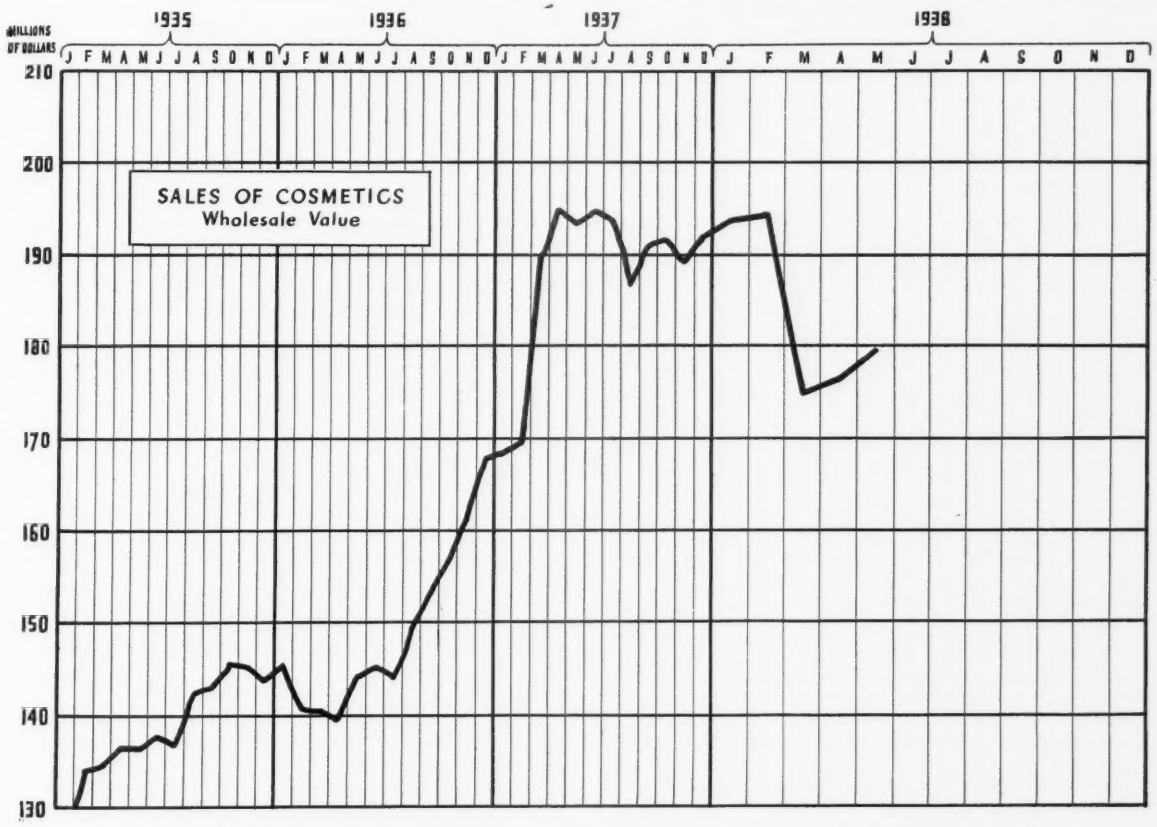
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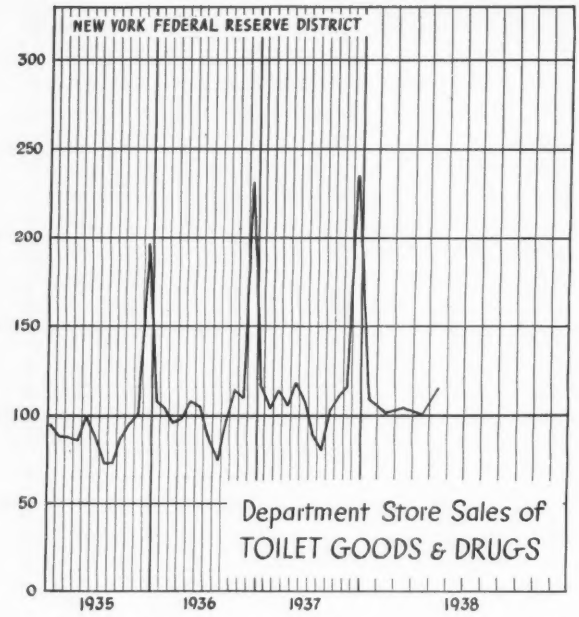
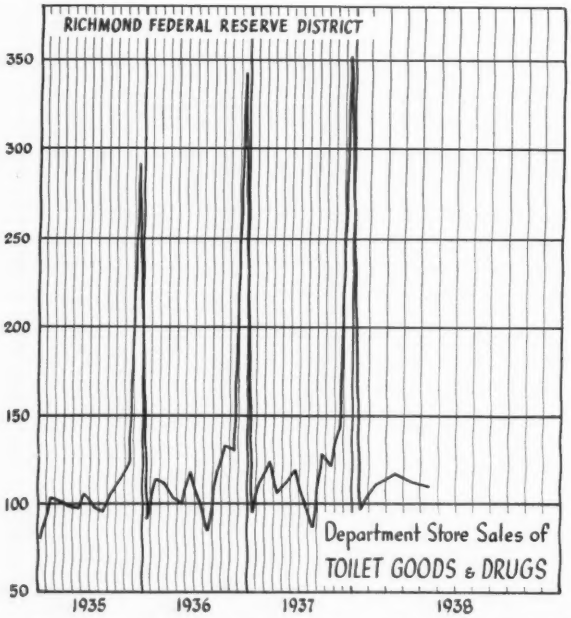
SALES OF COSMETICS
Wholesale Value

The wholesale value of toilet preparations sold in the twelve month period ended May 1938 was equal to $179,515,000, a decline of 7.1 per cent. from the value of $193,388,000 in the twelve months ended May 1937. For the twelve months ended April 1938, sales were equal to $176,487,000.

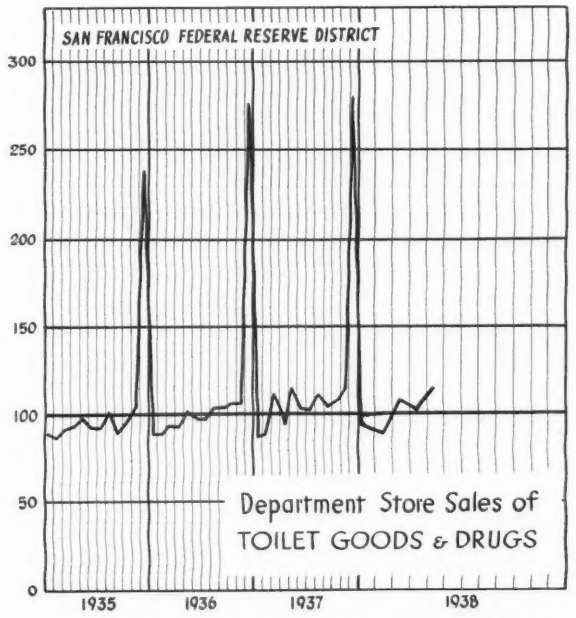


Sales of toilet articles and drugs by department stores in the New York Federal Reserve District were 2.6 per cent. less in May 1938 than in the same month of 1937. Corresponding unadjusted indexes were 114.2 for May 1938, 100.8 for April 1938 and 117.2 for May 1937.

Sales of toilet articles and drugs by department stores in the Chicago Federal Reserve District declined by 7.8 per cent. in May 1938 as compared with May 1937. Corresponding uncorrected index numbers were 106.8 in May 1938, 109.6 in April 1938, and 115.8 in May 1937.



The unadjusted index of sales of toilet articles and preparations by department stores in the Richmond Federal Reserve District was 110.1 for May 1938, 113.5 for April 1938, and 112.1 for May 1937. Actual sales in May 1938 compared with May 1937, were 5.3 per cent. less in Baltimore, 1.2 per cent. greater in Washington, and averaged 1.8 per cent. less in the whole district.



The unadjusted index of sales of toilet articles and drug sundries by department stores of the San Francisco Federal Reserve District was equal to 114.6 for May 1938, 101.4 for April 1938, and 115.8 for May 1937. Comparing May 1938 with May 1937, sales were one per cent. greater in Los Angeles, 4 per cent. less in San Francisco, one per cent. greater in the Pacific Northwest, and averaged one per cent. less in the whole district.

Charles of the Ritz and Altman's, New York, have gotten together with the result that a beauty bar has been installed in the fashion departments and milady may select the proper make-up to accompany her new hat or new gown.

MAKING FAIR TRADE WORK: Houbigant has been quick to turn fair trade to practical sales use through a merchandising plan based upon a contribution to the various states' fair trade committees in proportion to orders received from retailers in that state. With every order blank there is a blank check to be made out by the druggist to his state committee on fair trade. The check is for three dollars on a $50 net Houbigant order, $1.25 on a $25 Houbigant order, $1.75 on a $30 Chermay order and 75 cents on a $15 Chermay order. The druggists are free to make their own selections and to include holiday goods; all orders must be filed by August 31, will be billed December 1, and are payable January 10, 1939.

Houbigant honors the checks on presentation and pays 90 per cent. to the fair trade committee of the state and 10 per cent. to the advisory fair trade committee fund of the N.A.R.D.

DRUG EXPORT TRADE: The chemical division of the Department of Commerce, C. C. Concannon, chief, announces that the export trade in medicinals in currently running close to 85 per cent. of the 1929 level and that at the present rate the aggregate for 1938 should reach, if not exceed the record for that year.

"Last year," the report continues, "the United States exported medicinals and pharmaceutical products, not including crude drugs, valued at close to $18,000,000, which was 25 per cent. above the $14,392,000 for 1936." Some of the leaders were tonics with shipments totaling $2,071,000, against $1,607,000 in 1936; laxatives, $1,031,000, compared with $890,000; salves and ointments, $1,441,000, compared with $1,219,000.

"Other proprietary products, exports of which in 1937 recorded substantial gains over those for the preceding year included mouth washes, shipments of which increased in value from $369,000 to $467,000; liniments, from $155,000 to $180,000; cold preparations, from $530,000 to $687,000; inhalants, from $243,000 to $349,000; fever remedies, from $85,000 to $110,000; milk of magnesia, from $149,000 to $185,000; digestive preparations, from $180,000 to $244,000; headache remedies, from $92,000 to $131,000; and proprietaries not classed elsewhere in our trade returns, from $1,070,000 to $1,316,000.

"Exports of nonproprietary medicinals increased in value from $4,574,000 in 1936 to $5,824,000 last year. In this classification shipments of tablets, pills, capsules, and similar preparations increased in value from $2,515,000 to $3,203,000 and elixirs, tinctures, extracts, ampoules and similar liquid preparations from $1,605,000 to $1,948,000.

"Total exports of biologics aggregated $2,564,000 in 1937, against $2,200,000 during the preceding year—those for human use advancing in value from $1,797,500 to $2,180,000."

PRODUCT DEVELOPMENT DEPARTMENT: A large company has just put on the market a "perfumed deodorant." What we are waiting for is the company who will add to its men's line an odorless perfume.

COPY CHANGES: Should advertisements be repeated or should new copy and art work be prepared for each issue or should the same copy ever be used in different magazines? One would think that a considerable amount of research and experience would be accumulated to answer this question because production costs eat up a considerable part of every advertising budget—a sum that could be used for additional space or the addition of new media if "repeats" could be justified.

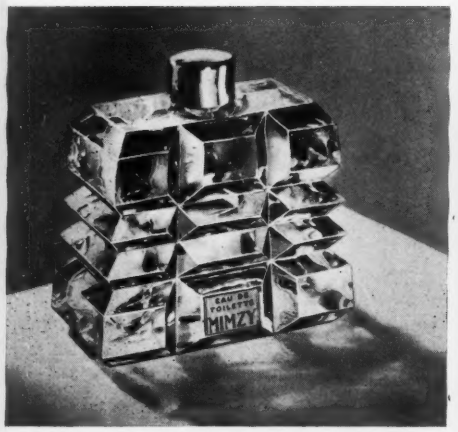
The weight of advertising selling and advice seems, to be against "repeats." Advertising agencies have production departments geared up for new copy and new ideas. There is a feeling in the advertising air that each insertion must bring something new. Yet time and again, that new piece of copy does not catch the eye, tell the story or arouse interest and action as effectively as the one discarded. Out of twelve pieces of copy, two may be honeys and two duds. If you can spot them, why not drop the duds and repeat the honeys?

There are comparatively few telling sales points for any product. There are a million ways these telling sales points can be visualized. When an advertiser happens to hit on a word and picture combination of these few sales points that brings home the bacon, why not keep using it until the action wears out?

This is the firm belief of Dr. Robinson, founder of "Psychiana," called the world's only mail order religion." Dr. Robinson spends between $60,000 and $100,000 a year on advertising. In ten years there has been no change in the advertising copy which was prepared by Dr. Robinson himself. A change of copy never pulled half as many inquiries as the original advertisement. "Advertising Age" cites the case of a Chicago agency which was so sure that it could improve on the copy that it paid $750 for one insertion of an advertisement it had drawn up. It pulled forty inquiries. Dr. Robinson's original copy appearing in the same magazine draws as high as 1,800 replies.

Advertising history has other notable examples of a piece of copy persisting through the years and licking every newcomer on demonstrated results.

There is no need to go this far. Styles and stories change and new presentations are needed. But there should be more realization in advertising that when you get a good advertisement, one that you know is good from experience and results, you shouldn't be afraid to use it again—and again.



DE RAYMOND

HOUBIGANT

CHARBERT

B. & L. LABS.

LA CROSS

BARBARA GOULD

IMPERIAL FORMULA

MARIE EARLE

YARDLEY

FAY

LENTHERIC

CARLYLE CO.

PARFUMERIE DE RAYMOND

Parfumerie de Raymond has adopted a new bottle for the packaging of the following Eau de Toilette odors: Mimzy, Deviltry, Pinx, Gardenia-X, Magnolia-X and Honeysuckle-X. This bottle is of heavy glass, deeply faceted, and is available in three shades.

HOUBIGANT

Houbigant is introducing the "Paris fashioned" double vanity, containing loose powder and rouge. Enamelled tops are colored in red, blue and green and are adorned with the familiar "basket of flowers" emblem in gold plating. Something else new is the "Hostess" or "Weekend" Eau Florale Concentree package containing a bottle of Eau Florale and talcum powder.

PARFUMS CHARBERT

Parfums Charbert is presenting a refill for the smart flask which holds the Gentleman's Eau de Cologne. This is an invigorating, fragrant Cologne attractively packaged.

FAY

Bristle brushes are no longer "forgotten men" since the advent of Fay's Professional Brush-Glo. This cleanser for all bristle brushes answers the need for a cleanser which is easily used and leaves brushes spotlessly clean.

PEARSON PHARMACAL CO.

Pearson Pharmacal Co. has announced an addition to the line of Dew deodorants, Dri-Dew. It is a cream deodorant which is said to stop perspiration.

B. & L. LABS.

Usa Foam Million Bubble Bath adds the fragrance of North-woods pine to its Eau de Cologne crystals. Now liquid as well as crystals are available in the two fragrances and both possess certain cooling ingredients which make this a refreshing bath for the summer.

LA CROSS

La Cross in introducing a pedicure set called Lido. In addition to the hardware and bottled products already in the line, it contains a new product, Creamy La Cross Foot Lotion, a soothing white lotion, mentholated for additional coolness.

BARBARA GOULD

Barbara Gould's travel kit is smart in appearance and comes in red, black and brown in simulated alligator. It contains all the essentials for traveling, all of which can be replaced or refilled.

LENTHERIC

Lentheric has packaged carnation and lavender talcum powder to harmonize with other Bal Masque items—bath soap, three silent messengers and the vanity and lipstick.

HOWE CO.

The Howe Co. has repackaged its "Hollywood" line of cosmetics. The packages are smartly modern with blue and white labels, harmonizing with lithographed double shell caps.

IMPERIAL FORMULA, LTD.

Imperial Formula, Ltd. is introducing four preparations—Bedouin Suntan oil; Riviera Sun Beige, a suntan liquid cream; Elysian cream (a make-up base) in various shades, and cream powder foundation in a new shade, Autumn Glow.

MARIE EARLE

The Marie Earle beach kit has a large compartment designed to hold a bathing suit, towels, etc., and a separate smaller compartment set into the side which holds five essential beauty preparations and a gay bandana.

YARDLEY

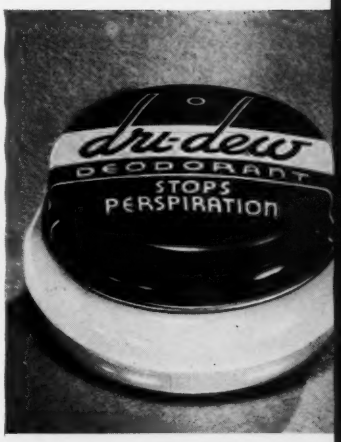
Yardley now offers its liquid Brilliantine with an atomizer in a gift box. Liquid brilliantine is best applied with an atomizer for spraying distributes the brilliantine quickly and evenly and is pleasant and economical as well. The bottle is especially attractive—rather square and chunky and not likely to tip over.

CARLYLE CO.

The Carlyle Co. presents "Luretone" a nail dress in a smart glass container that fits the fingers. The carton and label are of bright gold foil printed in white and the bottle is equipped with a quill brush applicator.

KIMBLE GLASS CO.

Kimble glass vials, rubber-capped by a closure that can be readily punctured to let out a drop at a time are used to re-package small quantities of "Evening in Paris" and other well-known perfumes.



PEARSON PHARMACAL

HOWE CO.

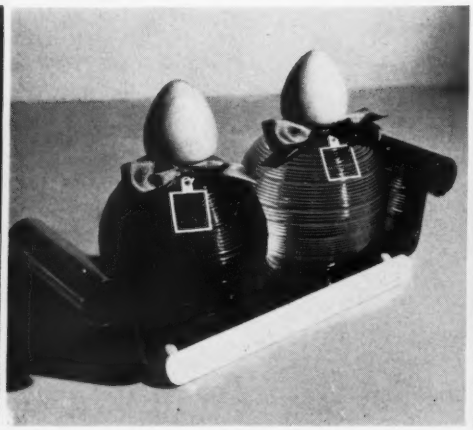
KIMBLE GLASS CO.

BOURJOIS

CHEVALIER GARDE

YARDLEY

MARTON FRERES



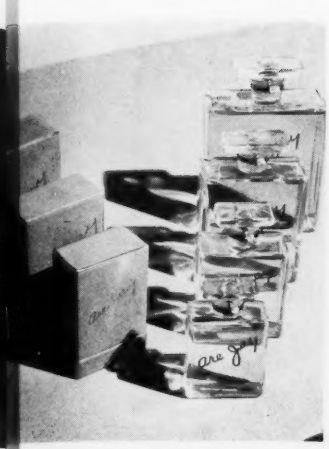
WRISLEY

RE-NAITRE

L. PERRIGO CO.

QU-TEE LABS.

JOHNSON & JOHNSON



PARFUMS ARE JAY

VIGNY

SCHIAPARELLI

BOURJOIS

The interesting feature about Bourjois' new triple vanity is the fact that it embodies a complete lipstick. It comes in loose powder only and may be had in two finishes, either simulated gold or chrome and blue.

PARFUMS CHEVALIER GARDE

Parfums Chevalier Garde is offering five ounce Eau de Cologne, H.R.H., especially prepared for the summer months. This package was inspired by the old Russian decanter that was used for many years in the homes of Russian ladies. It has a cut glass crystal stopper.

YARDLEY

Yardley has repackaged Astringent Skin Tonic to conform with the charming Yardley beauty series. It appears now in the familiar cylindrical bottle capped with the ivory-colored "bee pattern" stopper. Yardley Astringent Skin Tonic is a bracing, stimulating lotion which helps reduce excess oiliness.

PARFUMS ARE JAY

Richard Jaeckel's perfume "Are Jay" which has been sold in the California and New York Jaeckel stores exclusively for the past twenty years, is now available to better department stores. The perfume, which is excellent for furs, is available in four sizes. Another perfume, "Three Little Minks" will be introduced in the Fall.

H. H. PRINCE GEORGE OF RUSSIA

His Highness Prince George of Russia offers Aqua Rex and Aqua Regina, the Cologne of the king and queen, in a special presentation for travel and gift purposes.

MARTON FRERES

Marton Freres offers a bottle of liquid Sea Water Soap and one of Eau de Cologne in an ingenious, double nautical kit for the comfort of voyagers. Both bottles have shaker tops, and their canvas covers prevent slipping out of wet hands.

ALLEN B. WRISLEY

Allen B. Wrisley presents a bubble bath and cologne in attractive bottles topped with wooden stoppers. The two bottles are sold as a combination on an attractive metal tray with wooden trim to match the bottle caps.

COMPAGNIE RE-NAITRE

Compagnie Re-Naitre is featuring "Feet First," a package containing two interesting preparations for the long neglected feet—a pedicure powder to help remove callouses and a lotion to smooth rough, scaly skin. These preparations may also be purchased individually.

VIGNY

Vigny offers Heure Intime Eau de Cologne which, like the perfume, is a delicate and charming fragrance. It is lighter of course and admirably adapted to warmer weather.

SHULTON

Shulton's Old Spice toilet water of Early American Toiletries is now available in two new sizes—8 and 16 ounces. A nice detail on the packages of other members of this line is the decorative paper of quaint design which lines each box. This paper is now used as an outside wrapper on the cartons containing the three sizes of toilet water.

L. PERRIGO CO.

L. Perrigo Co. is marketing its "Lady Jean" toiletries in new packages. An interesting feature of the containers is the raised ribbed design at the shoulder and the flat base which extends beyond the container proper thus protecting the label from scuffing and damage in handling.

QU-TEE LABS.

Qu-Tee Deodorettes are small pads, stainless and greaseless, which help to eliminate perspiration odors and are convenient to use. The delicately scented deodorant discs are attractively packaged in a glass jar with a gray and white label.

JOHNSON & JOHNSON

Johnson & Johnson is marketing a De Luxe Baby Gift Box. It contains a luxurious assortment of baby toiletries—two each of baby soap and baby powder as well as a jar of cream and a bottle of baby oil.

PARFUMS SCHIAPARELLI

Schiaparelli's new Eau de Cologne double strength is available in four sizes, 4, 8, 16 and 32 ounces. The bottle is similar to the perfume bottle but not quite so elaborate. The "pinched waist" makes it easy to handle.

FROSTILLA CO.

Frostilla Co. is introducing Sunfilter cream. It is said to filter out 90% of the burning rays of the sun, preventing painful burn and promoting a natural tan. It dries quickly, is not greasy and is fragrantly scented.

H. H. PRINCE GEORGE OF RUSSIA

SHULTON

FROSTILLA

Cashmere Bouquet

"THE ARISTOCRAT OF TALC POWDERS"

Cashmere Bouquet

-and Packaged for the Part!

YOUR PRODUCTS too - may enjoy membership in the Aristocracy of *their* trade. They may seek nomination to the "inner circle" ¶ "NATIONAL" will groom them for *acceptance*! "NATIONAL" Containers feature *individuality* in product display.

Many Aristocrats of Merchandise Dress "NATIONAL"

NATIONAL CAN CORPORATION

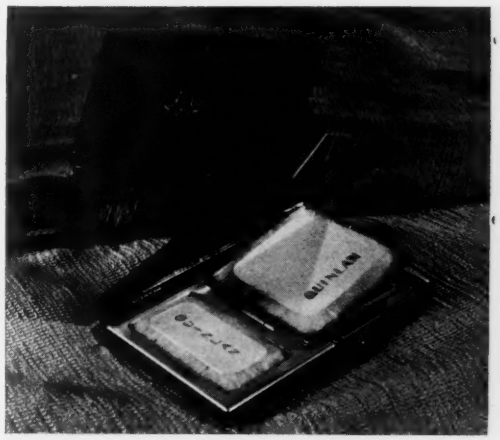
SUBSIDIARY OF NEKOOSA-EDWARDS PAPER COMPANY

EXECUTIVE OFFICES • 110 EAST 42nd STREET • NEW YORK CITY

Sales Offices and Plants • NEW YORK CITY • BALTIMORE • MARION, N. Y. • CHICAGO • BOSTON • DETROIT • HAMILTON, OHIO

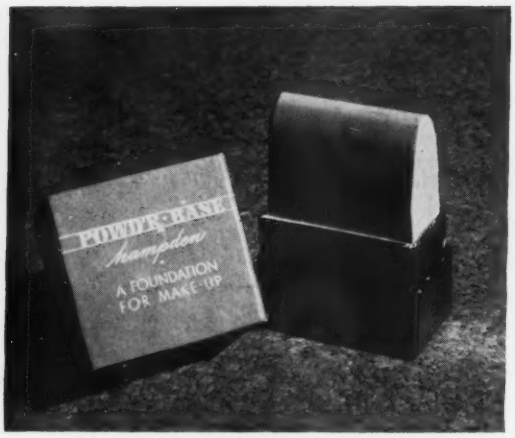
PACKAGING NOTES

HOUR CAP: A very pleasant little gadget is the Hour Cap, invented by John C. Ehrlich of the Indexing Devices Co., New York. Each time you take your medicine you set the cap to the time you should take the next dose. The cap won't ring a bell or administer the dose unaided but it will remind you if you look at it and didn't forget to set it the last time. The cap is available to manufacturers and of course the trade-mark may easily be incorporated into the cap design.



EMERGENCE OR REVIVAL: In February 1932 we said that "new possibilities in packaging cosmetics are opened by the coloring of aluminum." These possibilities never materialized until this year when the new, lightweight compacts put in their appearance, made of aluminum and colored by the process which we described in 1932. The coloring is achieved by an anodic oxide coating which has a high sheen and a hard finish highly resistant to scratching.

STICK POWDER BASE: "Powd'r Base," a foundation for make-up in stick form brought out by the Hampden Sales Assn., has created a great deal of interest in this type of preparation—as a matter of fact, so much so that several other manufacturers are now either marketing or planning similar foundations. This is, in a sense, a revival because many years ago preparations similar to this were placed on the market without creating much furore, which was probably due to the fact that very little was done to promote them and women were not as "foundation conscious" as they are today. The "Powd'r Base" introduced by Hampden is prepared solely as a powder base, is easy to use and is said to keep powder on and insure lasting make-up. It is non-greasy and gives a flattering, lovely smooth velvety finish to the skin. The fact that it is in stick form seems to appeal to the consumer. It is packaged entirely in a paper carton and comes in three sizes, the dollar size in a white and orchid box, the fifty cent size in red and gold, and there is also a trial size at 10 cents for the syndicate stores.



UNUSUAL BEACH PACKAGE: Suntanners should welcome Maison Jeurelle's innovation—Sun tan oil contained in a bottle which boasts a cork floater stopper, with attached brush with which to spread the sun tan oil. A terry cloth carrying-bag in solid brilliant color holds the bottle, and combines usefulness with smartness. The cork effect is also carried out on the small, neat label.

COTY'S "PARIS": Because of its popularity, Coty has selected the "Paris" fragrance to scent a complete new series of charm and beauty aids. So startlingly and artistically is "Paris" now transformed that the new version is tantamount to a new creation. New crystal flacons and colorful new packages have been designed with glimpses of the City of Paris and the "Great Seal" of Paris which lends richness and dignity. Showers of sparkling lights play over a background of beautiful French blue. While these lovely packages will make handsome dressing table accessories, in creating them Coty was mindful of the fact that the brilliant, colorful new decor has irresistible display appeal. Already many of the stores are showing beautiful window displays of the complete Paris ensemble.

LELONG'S FIVE FLORALS: Fashion this summer decrees flowers—flowers on hats, dresses, tucked in stray buttonholes, twined in the hair for evening, fastened on shoulders, waists and wrists, and for evening wear, even on slippers. Multi-colored floral designs predominate for summer formals and flowered prints are leading in popularity for street wear. Lucien Lelong has cleverly taken advantage of this fashion and is introducing Les Fleurs de Lucien Lelong, five lovely floral odors, to promote during the summer season. The lovely flasks of Lilac, Sweet Pea, Mimosa, Magnolia and Honeysuckle perfumes are anchored on ivory bases and encased in transparent boxes decorated with flowers and ferns. The prices range from $1 for the purse flacon up to $25. To stimulate further interest in these floral odors both by the store and the consumer, Lucien Lelong furnishes without charge, a large bulk bar in plaster, beautifully decorated with a profusion of the flowers which the perfumes represent, to any Lucien Lelong agency placing an order for one each of the five floral fragrances, in either the 4-ounce, $25 retail, or 8-ounce, $40 retail sizes. The dimensions of this unusually attractive bar are 20″ high, 16½″ wide and 5¼″ deep. A tiny replica of the large bar is also available to hold five tester bottles. With perfumes sales at their lowest ebb during the hot weather, this floral promotion will no doubt help stimulate sales.

Blue—offers a myriad of attractive hues and tones ranging from the cold azure of dawn to the rich ultramarine of night . . . Shown here are a few suggestions which illustrate in part Continental's skill in package design. Continental excels also in lithographic reproduction aided by superior printing plates made in our own master engraving plants. The fine craftsmanship of our engravers insures the excellence of your package no matter how intricate its design . . . Whenever you have a problem in packaging—regardless of whether it is a question of design, color, size, shape, reproduction, or laboratory research—call on Continental . . . We are always at your service.

ONE OF A SERIES DEVOTED TO THE USE OF COLOR IN PACKAGING DESIGN. COPYRIGHTED, 1938.

A New

Swindell stock perfume bottle designed to dramatize YOUR *label!*

R 31

Again, Swindell proves it is possible to take advantage of the economy of a stock bottle without sacrifice of distinction or individuality! R 31 is made in the following sizes: 1 dram, 2 dram, ½ oz., 1 oz., 2 oz., 4 oz. Write for samples and prices.

SWINDELL BROS. • BALTIMORE
200 FIFTH AVENUE NEW YORK
LATIN-AMERICAN REPRESENTATIVE:
MR. ROBERTO ORTIZ, HAVANA, CUBA

When you think of bottles, think of

Swindell

LEGAL ANGLES

By S. L. MAYHAM

THAT NEW FOOD AND DRUGS ACT

The whole of this department—and more—could easily be devoted this month to the new Food & Drugs Bill passed by Congress and signed by the President. Yes—I know the prediction about the bill in this department was wrong. Too many people have said that already. Better minds than those of this department have already analyzed the bill and more will, probably including that of The Editor, so here there will be mention of only one or two points which may arise to plague the unsuspecting. First, that drug definition which certainly includes a lot of things which most of us think of as cosmetics. The drug provisions are a good deal stricter than those which cover cosmetics and if the Department decides, as it certainly should under the definition, that hair dyes, depilatories, some deodorants, an occasional suntan preparation, and so on, are "drugs," the people making them will have more to worry about than they are bargaining on. Second, the cosmetic definition includes raw materials for cosmetics without excepting essential oils and perfume materials. This was pointed out privately a long time ago to some essential oil trade leaders but they chose "not to bother about it." Some of them may now be bothered whether they like it or not. Finally the marking provision on ingredients are something which cosmetic men ought to study carefully in order to keep out of trouble. They are more thorough than many suppose and almost no cosmetics are now properly labeled under them. This is a warning! For the rest of the bill, I leave it to the Editor and the analysts. My space won't permit all that I might, and perhaps should, write about it.

NEW YORK CITY'S DRUG LAW PLANS

Rumors are things which self respecting newspapers and magazines do not deal in. But columnists go to town on them in a big way. Somewhere between rumor and fact is the information which reaches this department that the New York City drug and cosmetic ordinance which had us all so worried a couple of years ago has been dragged out of Health Department files and dusted off for some purpose or other. Readers will recall that this is the measure which the Mayor consented to hold back until Congress took some action on a new Federal Food & Drugs Act. Many thought it had been abandoned or forgotten, but such is not the case. The move for its revival may come to nothing but there are some fairly powerful political figures behind it. The affected industries might well begin to think about this measure now so that changes or amendments will be ready when the City Fathers produce it.

ANOTHER TRADE PRACTICE CONFERENCE

The manufacturers of the Beauty Trade, meaning principally those houses whose products reach the public through beauty shops, have organized and are asking the Federal Trade Commission for a Trade Practice Conference. I approve of organization and of the general idea of the conference but express the hope that this new group may have better luck than that which attended a similar effort by manufacturers of cosmetics and perfumes whose products go through regular retail channels. It is a long time ago and perhaps some memories need to be refreshed by the statement that this group with high hopes once held a Trade Practice Conference in New York and adopted some sensible and some rather silly rules. The Trade Commission is still sitting on the rules and seems likely to sit on them for some time to come. One of these days they may be issued and even those who devised and enacted them will have forgotten what they contained. Maybe the Commission seeks that dramatic surprise element which the revered Mr. Barnum used so effectively many years ago. Good luck, beauty manufacturers! May your grandchildren live to enjoy the rules which your Conference will draft.

THE DISTRICT OF COLUMBIA TAX

The Toilet Goods Association has issued a very learned and comprehensive bulletin on the constitutionality of the tax which Congress has enacted upon business transactions by salesmen from the several states in the District of Columbia. The tax is an excise in the form of a license and Court decisions cited by the Toilet Goods Association are apparently in conflict as to the legality of such measures. It is pointed out that the tax is upon interstate commerce but does not apply generally to all such commerce but merely to commerce between the States and the District. This is much too fine a legal point for me and it would be folly to forecast what the Courts might hold in such a matter. It may be pointed out, however that Congress undoubtedly has the power to levy taxes to support operations in the District and that this excise does apply equally to the citizens of all of the States desiring to do business in the District. Nor is the District a "State" in every sense of the term although for some purposes it possesses state powers and state rights. Meanwhile the matter is not too tremendously important and it is a simple matter to test it out as the T.G.A. points out.

FAIR TRADE AND PRICES

Senator Tydings in an address before the Grocers' Association pointed out recently that the Tydings-Miller Act is not "price-pegging" legislation but merely a law which "permits the various States to pass legislation to allow—contracts—to guarantee that commodities will not be sold below cost." This is sensible and by the same token, the argument may be applied to all of the State Fair Trade Acts. Most of us in the drug and cosmetic indus-

Are You
Interested in

SOUTH AFRICA

as a Potential Source for Your Products?

If so, consult—

THE H. R. HUDSON MANUFACTURING COMPANY
P. O. Box 97, DURBAN, South Africa

We are erecting a factory **solely** for the manufacture, under license, of overseas ***medicinal and toilet*** preparations.

We shall have no preparations of our own to manufacture, neither shall we undertake the manufacture of any two competitive lines.

Wherever output (or potential output) warrants it, a portion of the factory will be partitioned off and reserved solely for any one preparation, or group of preparations, belonging to any one proprietor. Plant and machinery installed in this private section will be used for no other preparations.

We have had eighteen years experience of South African pharmaceutical manufacturing and are experts in the manufacture of **cosmetics.**

We are not agents, and have no selling organization, but undertake to manufacture and pack any product with secrecy and complete privacy and deliver same to the proprietors agent at a cost it will pay you to investigate.

Normal duty on your product entering the Union of South Africa, packed ready for sale, is 20% for medicinal, and 40% for toilet articles on the home consumption value. Having your product manufactured in South Africa will save the bulk of this duty and enable you to increase your advertising proportionately.

When addressing your enquiries, kindly indicate the present consumption of the product, or products, in South Africa. All communications will be treated as strictly confidential.

THE H. R. HUDSON MANUFACTURING CO.

Manufacturing Pharmacists and Cosmetic Specialists

P. O. Box 97, DURBAN, South Africa

Proprietors of Spiritous Preparations Please Note:—Alcoholic preparations entering the Union of South Africa if containing over 3% of proof spirit pay a duty of 38/6 per bulk gallon. The same alcoholic preparations if approved by the Union Excise Department can be manufactured in the Union with alcohol under rebate of Excise duty on which only 7/6 per proof gallon is levied.

try see the point perfectly, but have any of you good readers of this department ever tried to explain it to the satisfaction of a somewhat irate female consumer? If so, you know that the logic is faulty or that the said consumer is not a logical person. There are some fine argumentative and debating minds in these industries and I'd like to suggest a committee of these to produce the argument which will convince said irate female consumer. It's going to be badly needed before we are through with Fair Trade. Frankly, I haven't yet heard the argument which would convince the i.f.c. as against the argument—fallacious though it may be—of the R. H. Macy advertisements. Eight cents less in price talks much louder than the theory of loss leaders, at least as it has been presented thus far. If we want Fair Trade to last we'll have to think of the argument which will raise that eight cents, and it can't be a bluff either.

MR. PATMAN AND THE CHAINS

At that same grocery convention, Representative Wright Patman, of whom a few of us have probably heard, blasted away at the chain stores with a statement that he "wanted them driven from the field." It will take a lot of driving but then Mr. Patman is quite a driver. What worries me about this gentleman is that he doesn't call his shots. He aims in the general direction of the chains but doesn't look to see what is in the background. I rather like a lot of things about the chains but I'll not rush to their defence because they are amply able to take care of themselves. Some of the other people hit by Patman's errant shots, however, are not in that fortunate position. It's a bit cruel to suggest an Association for the Education of Mr. Patman, but something ought to be done about the gentleman from Texas, who curiously has a faculty for getting things done which has proved no end embarrassing and troublesome to people who never did him any harm.

FAIR TRADE INVESTIGATIONS

We may not like WPA too much, but it will have to be admitted that that alphabetical organization has done several pretty good research jobs. The Guide Book project, for example, has brought out some very excellent results. In any event, it is certain that a more unbiased and better survey of the results of Fair Trade is likely to come out of WPA than out of a number of other agencies which have considered attempting the work. It is less likely to be biased on either side than would the Trade Commission or the N.A.R.D. to mention two organizations talked of in that connection. Announcement that between $2,000,000 and $3,000,000 will be used for such an undertaking to cover about 200 towns and cities in 35 states will be welcome news to those who are sure of their case on both sides. Some others may not be too well pleased, either with the project or its results when completed. Industry and the public, however, are entitled to the facts. WPA seems more likely to uncover them than anyone else and a lot of facts ought to be dug up for the amount of money to be spent on the project.

THE STATE OF TRADE

Things haven't been so hot in wholesale cosmetic channels but during the last few weeks brighter signs have appeared on the horizon. Word reaches this department that orders not to buy anything have been relaxed from "upstairs" in at least two of New York's big department store outlets. It was about time because stocks in the stores were in pretty bad shape. Also, the purveyor of a new line reports acceptance in two quarters most unlikely to take on new goods in bad times. Meanwhile retail cosmetic business has not been bad and retail drug business has been good for the season. Manufacturers may well postpone that threatened "dock jumping" event. They may, after all, find the land quite attractive during the next few months.

COUNTRY OF ORIGIN

Congress passed a bill at its session just ended to insure that country of origin be plainly and legibly marked on items of imported merchandise. Explanatory terms may be required if the Treasury Department thinks they are necessary, which means, perhaps, that the troublesome puzzle of imported perfumes in domestic packages and vice versa may be straightened out to the consumers' benefit. Misleading marking was possible under the old law. It will hardly be possible under the powers granted the Department by the new statute. The Trade Commission has needed help on this situation and is likely to get it from the Treasury. These Treasury people are tough birds to tangle with. My advice is to be careful—extremely careful—on marking in the future.

ADVERTISING RESPONSIBILITY

I hope that manufacturers of toilet goods will not accede to the demands of department stores to hold the latter free from any claims arising out of advertising. Here was a point, and about the only one left, where the manufacturer could hand a slight part of the load of toilet goods merchandising to the retailer. It was one on which some bargaining with the distributor as to other points at issue between them would perhaps have been possible. Frankly, the stores were scared almost out of their wits and pretty nearly ready to return a few of the concessions which manufacturers have so foolishly made them on merchandising, if only the manufacturers would accept full and complete responsibility for advertising. The stores, however, are good poker players and with a bob-tailed flush it appears that they may have again bluffed the manufacturers in this matter as they have on almost every other point. A little nerve and a raise would win back a lot of things but you can't raise when all your chips are gone. This advertising responsibility thing looks from here like a whole stack of blues.

WAGES AND HOURS

The Wage and Hour Law will affect very few in the drug and cosmetic industries. Studies made during NRA days showed that almost no cosmetic and drug houses were violating the much higher standards which the Codes prescribed. There has been no very material change in the situation since Code days although State surveys have shown slightly lower rates in some instances. By the same token the survey now being made by the Department of Labor on drug and cosmetic trade hours and wages need disturb very few in the industries. The one or two conspicuous examples of low standards which emphasize the high standards of the industry as a whole *should* be brought into line for competitive if not for humane reasons.

WHO IS THE MANUFACTURER?

An official decision has been prepared by the Treasury involving the question of defining the term "manufacturer" under the Excise Tax Law. As forecast in a special article two months ago, the trade-mark owner is believed by the officials to be the taxable party under recent court decisions and the new ruling defines the manufacturer as the person who affixes or *causes to be affixed* his distinguishing name or mark to the goods. Trade leaders have been consulted on the affect of this ruling and its acceptability to the industry as a whole. Regardless of the reaction, best advices are that this ruling or one containing precisely this same interpretation of the term is to be issued. That it will lead to Court fights is said to have little or no effect upon the Treasury attitude. Officials believe that it will be upheld in view of decisions in numerous tax cases under former rulings. In this connection it is noteworthy that every important tax case to date has been won by the government. Of course, such a definition is quite another matter than an inter-company wash sale transaction, but decisions that trademarks are extremely important elements of value are replied upon in the Bureau to be applied to the new ruling, when, as and if issued.

WHAT A DRAWING CARD!

We have some pretty attractive gals in the toilet goods business. Without seeking to advertise anybody. I might mention a certain Miss Bennett and a certain Miss Pickford who are quite well known on the Coast and probably a good many others of equal charm.

OPPORTUNITY IN CANADA FOR REPUTABLE TOILET GOODS HOUSE

■ We know of an excellent opening for a reputable toilet goods manufacturer to enter the Canadian market.

An old established firm of manufacturing chemists selling their own medicinal preparations direct to retail druggists from coast to coast, but without an advertised line of toilet preparations or other agencies, is equipped and would prefer to both manufacture and sell one medium priced, well advertised line with national or good sectional distribution in the border States. Naturally, adequate advertising in Canada in support of the line is a first consideration.

If you are interested in entering this growing market, or are not satisfied with your present Canadian representation, this is a genuine opportunity. Write to W. E. Cox, care

NORRIS-PATTERSON LIMITED
ADVERTISING AGENCY
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INEXPENSIVE

A Modern Wrap for Drug and Cosmetic Packaging

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● CAPS ● PERFUME BOTTLES ● PERFUME RODS ● DENTAL & CORN RODS ●

● PIPETTES ● NAIL POLISH APPLICATORS ● VIALS CAPS AND RODS ●

Try this NEW Applicator Package with the new applicator

FOR INCREASING SALES

The bottle is our No. 7220 Perfection Design—a square oblong shape—furnished in 1 oz. and 2 oz. sizes.

The new applicator (No. 2800) has a black rod, instead of the usual glass rod. This shows up better in the liquid—and gives the applicator better display and use value. Length of rod is determined by size of the package.

You'll want samples and prices immediately.

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ALCOHOL NEWS

JULY ★ A Monthly Series of Technical Articles for Chemists and Executives ★ 1938

Standardizes Pectin By Adding Alcohol–Treated Fruit Fiber

WASHINGTON, D. C.—Powdered pectin can be standardized cheaply and effectively without the use of sugar if a predetermined amount of alcohol-extracted, depectinized, purified fruit fibers together with a small amount of pectin dispersing agent are added to it, according to a recent patent issued here.

The standardizing fibers are readily obtainable in the course of extracting pectin, the inventor sets forth. As an example, apple pomace may be treated with cold water to remove all the water-soluble substances, after which the excess water is then removed.

Fibers Hold Pectin

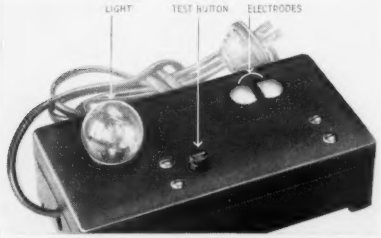
Following this treatment, relatively dilute alcohol is used to remove from the residue undesired constituents such as tannins, fruit acids, sugars, waxes and the like. With residual alcohol removed, the product now consists of purified cellulose fibers in which the fruit pectin is held, the patent papers state.

By solubilizing this contained pectin with an acidulated aqueous solution, "completely deflavored," purified fruit fibers are obtained by employing a filter press, the inventor asserts.

In standardizing the pectin, which has been precipitated with alcohol from the aqueous solution and then dried, it is first tested to determine its gell strength. Then, the finely divided fiber, the patentee explains, is added in the requisite quantity to bring its setting strength to the desired point. This may be done in any suitable mixing machine.

Electrical Resistance Detects Emulsion Type

An instrument for determining whether emulsions are the "water-in-oil" or "oil-in-water" type utilizes their difference in electrical conductivity, according to a recent article. A dab of the cream to be tested is placed between two nickel silver electrodes



and the circuit is closed with a test button. An "oil-in-water" emulsion will pass sufficient current to light a low-wattage neon bulb, while a "water-in-oil" type will not, it is said.

The author claims that the instrument is useful "in developing creams and other emulsions . . . to demonstrate whether a cream is of a 'nourishing' type, that is, water-in-oil, or a 'vanishing' type, oil-in-water . . . to study the inversion of emulsions and also to determine whether an emulsion or cream is breaking. A test of this type to study stability will show a breaking cream long before it becomes apparent to the eye."

It's Waikiki Itch in Hawaii

Most familiarly known as "Athlete's Foot," the infection, epidermophytosis, is variously called Waikiki itch in the territory of Hawaii, Dhobie ("laundry") itch in the Philippines, Hongkong foot in China, and Trench Foot by soldiers at the front. The infection affects approximately one-third of the world's population in one form or another, according to Dr. Reddish.

New Procedure Detects 10^{-5} gms. Nicotinic Acid

LONDON, England—As little as 10 millionths of a gram of nicotinic acid can be easily detected in foodstuffs by using a new colorimetric method, it is announced in a recent issue of *Nature* published here.

The method is based upon the color produced by the pyridine ring when acted upon by cyanogen bromide and aniline.

Values for typical foodstuffs are given as:

Nicotinic acid content of foodstuffs	Mg.%
Yeast	62.5
Skimmed milk powder	10.0
Whole wheat	5.33
Ragi	3.08
Rice (raw-milled)	2.38
Rice (parboiled)	2.78
White corn	1.48

These values differ from those previously reported by Dr. Wilson of Johns Hopkins University who listed the nicotinic acid content of foodstuffs to be twice those represented in the above table. Dr. Wilson is reported to use dilute nitric acid as a means of extracting the nicotinic acid as contrasted with the aqueous extract employed by the author in *Nature*.

Nine Production Lines Show 11.2% Lost Time

A study of nine production lines in the drug and cosmetic industry revealed that lost time amounted to an average of 11.2% of the total operating time, according to a recent report. With direct labor costs per line between 20 and 40 cents per minute, the matter of lost time is of sufficient importance to warrant careful inspection of all equipment, the report points out.

The percentage attributable to the different pieces of equipment, the container, and the goods in process, are given as follows:

	% Lost Time		% Operating Time
Cleaner	8.7	equivalent to	.99
Filler	20.0	" "	2.26
Capper	11.0	" "	1.24
Labeler	34.3	" "	3.88
Goods itself	15.9	" "	1.79
Miscellaneous	8.5	" "	.96
Experimental	1.6	" "	.08
	100.0%		11.20%

Tubers Will Cook White If They Pass Test in Alcohol

LANSING, Mich.—Alcohol can be used to determine whether potatoes will cook white, according to experimenters at the State College here. Describing the new test, *Food Industries* reports that a core no larger than a lead pencil is drawn from the center of the tuber and placed in alcohol. If the core retains its original whiteness, the potato will cook white, it is said.

Present Fungicide Tests Are No Real Yardsticks–Reddish

Study "Athlete's Foot" Remedies Against Four—Not One—Fungi

ST. LOUIS, Mo.—The common practice of using only a single test organism in determining the fungicidal properties of "Athlete's Foot" remedies probably explains why a preparation may be effective in one case and not in another, it is maintained by Dr. George F. Reddish and Ella Burlingame, both of the Lambert Pharmacal Co., writing in a recent issue of *Druggists Circular*. Their report is a paper presented before the Scientific Section of the Proprietary Association.

Penetration Also Important

It should be recognized that four—not one—fungi cause most cases of "Athlete's Foot," and even though all of these may not be present in a given infection, any yardstick for evaluating preparations should include tests against each organism, they declare.

The investigators list the four varieties as being associated with epidermophytosis in approximately the following order: Epidermophyton interdigitale, Epidermophyton rubrum, Epidermophyton gypseum, and Trichophyton rosaceum. While these may be divided into two distinct groups, the monomorphous and the multiform, the lesions are not especially different for the two groups, Dr. Reddish and Miss Burlingame assert.

In a new test which, it is pointed out, includes the factor of penetration, each organism is streaked over the surface of Sabourand's agar in a 9 cm. Petri dish, using a dry sterile cotton swab inoculated with a five-day culture of these organisms.

Since, they explain, the organisms cannot usually be isolated in a pure culture from the

(Continued on next page)

"ATHLETE'S FOOT" affects every third person, Dr. G. F. Reddish reports. He suggests that remedies should be tested against four—not one—organism (see article above). *Ewing Galloway*

ADVERTISEMENT—*This entire page is a paid advertisement.*

Surgeons Should Limit Washing to 3 Minutes English Doctors Report

LONDON, England—Of the two kinds of bacteria found on the skin, (1) normal parasites such as white staphylococci living in superficial layers, and (2) foreign and often dangerous bacteria due to accidental contamination, surgeons cleanse their skin to remove or destroy only the latter, Garrad and Keynes state in the *British Medical Journal*.

Surgeons should wash with soap and water for not longer than three minutes, since continual scrubbing roughens the surface and induces bacteria growth, the article continues. After washing, the hands should be rinsed in alcohol to dehydrate the surface of the skin and dried with a sterilized towel.

Patients' skin should be cleansed with ether, soap and water, and dried with alcohol. Addition of mercury biniodide has no advantage, the authors assert.

Experimenting with animals whose wounds were infected with virulent streptococci, and treated by injection, or topical application of antiseptics, the doctors report that phenol and mercury perchloride failed to prevent the infection from spreading, while compounds of the diamino-acridine type did. The latter are said to restrain the growth of *Streptococcus pyogenes* even in solutions of 1 in 100,000 and serum or blood does not affect the bactericidal power. They are also described as non-toxic and leucocytes retain motility in a 1 in 1,000 solution of acriflavine. The authors recommend that a dressing soaked in a 0.2% acriflavine solution be applied for two hours, and injection of the solution with pressure into a punctured wound so that permeation will occur.

Reports New Sclerosing Solution is Less Toxic

Successful clinical application of a new sclerosing solution consisting of monoethanolamine oleate, 5%, with benzyl alcohol in the treatment of varicose veins is reported by Dr. S. T. Glasser writing in a recent issue of *American Journal of Surgery*. Monoethanolamine is an equimolecular combination of monoethanolamine and oleic acid.

A total of 550 injections has been given without untoward reactions, Dr. Glasser declares in comparing the new agent with sodium morrhuate, a cod liver oil derivative. Monoethanolamine oleate, it is pointed out, is less toxic than sodium morrhuate and possesses the advantage of having a definite and constant chemical composition.

Results, it is stated, have been satisfactory after six months, and there have been no sloughs following accidental perivenous injections.

Rates Vitamin C Equal To NH_4Cl As a Diuretic

LONDON, England—Cevitamic acid (vitamin C) increased urinary output in eight patients with cardiac failure and in one with edema, reports Dr. W. Evans writing in a recent issue of *Lancet*. Compared with recognized diuretics, vitamin C is as efficient as ammonium chloride, more efficient than digitalis and less so than theobromine in certain patients, Evans relates.

Mfg. Chemists Assn. Told Cost of "Chemical Jobs"

SKYTOP, Pa.—It takes an average investment of $11,250 for each job in a chemical plant, or $8,156 based on "factory and non-factory chemical employees," members of the Manufacturing Chemists Assn. learned at their meeting here on June 2nd. This statement was read from the report of a survey made by the Chemical Alliance which also showed the $5,223 of the latter figure is for capital assets and $2,933 for working capital.

Present Fungicide Tests Are Inaccurate—Reddish

(*Continued from previous page*)

blister fluid, the top of the blister must be cut away and the ceiling side applied to the surface of the agar when preparing cultures.

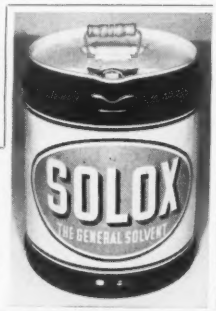
After incubation for five days, the agar cultures are cut into 1 cm. squares over which the fungicide to be tested is poured so as to flood the plates entirely. At periods of 5, 15 and 30 minutes one of the squares of culture and agar from each plate is removed and placed in 10 cc. of sterile broth.

Excess fungicide is washed out of the matted culture by shaking the tube lightly for five minutes. After this, the block of culture is removed from the broth and spread with the culture side down over the surface of a sterile plate of Sabourand's agar. These plates are incubated at room temperatures for three weeks and observed for growth.

Experience has shown that fungicides which kill the test organisms in five minutes by this test are effective in the treatment of "Athlete's Foot" as determined by clinical test, Dr. Reddish and Miss Burlingame state.

New Solox Drum

Latest addition to the family of easily identified U.S.I. containers is this attractive blue, red and white 5 gal. drum for U.S.I.'s proprietory solvent.



TECHNICAL DEVELOPMENTS

Further information on these items may be obtained by writing to U.S.I.

A viscosity stabilizer with strong wetting and anti-oxidant properties has been introduced, according to a recent report. It is soluble in all vegetable and animal fats, waxes, petroleum oils and distillates, the manufacturer states. Specific applications named are in varnish and lacquer manufacture, textile industry and in stabilizing suspensions of dry materials in oily mediums. Edible grades are available, it is said. **(No. 111a)**

U S I

Oil soluble sulphur for hair oils, scalp treatments and skin preparations in general is now available as a 20% solution, according to a recent report. The material is said to have special adaptability to alcoholic lotions. **(No. 112a)**

U S I

Glassine paper fused with a microscopic film of aluminum has been developed to provide a low cost metallic wrapping. Principal advantages of the product are high grease- and moisture resistance and repellency to light and heat, according to the manufacturer. **(No. 113a)**

U S I

Synthetic Witch-Hazel odor said to have one hundred times the odor strength of the natural product is now on the market. Two grades are offered, both of which are non-toxic, non-discoloring and non-irritating and are recommended for use in emulsified lotions, creams and soaps, the manufacturer writes. **(No. 114a)**

U S I

A new solubilizing agent for sunburn preventive oils is reported to have no effect on the odor or color of the oil. According to the manufacturer, an oil containing 3 to 5% of this agent washes off the skin as easily and as quickly as soap and water. **(No. 115a)**

U S I

Rust preventive paint which can be applied directly over any rusted or new, damp or dry surface is now on the market. The paint resists acid and alkali fumes and brine and by penetrating beneath the rust particles expels moisture, the manufacturer states. It is available in four colors and aluminum and clear forms. **(No. 116a)**

U S I

Ten perfumes especially developed for sunburn preventive preparations are said to be completely free from ingredients that may affect the skin adversely. The cost of the perfumes range from five to ten dollars per pound, an announcement states. **(No. 117a)**

U S I

A new insecticide sprayer is stated to be more powerful and to have a larger range than previous sprayers designed to fit stock-size cans. According to the manufacturer, the new sprayer will throw a fine mist of insecticide well up to the corners of a room with twelve-foot ceilings. **(No. 118a)**

U S I

Concrete, stucco and masonry can be protected against staining and efflorescence by spraying or brushing with a new transparent damp-proofing material, a recent announcement states. The liquid is said to be water-white, not a wax solution, and to have excellent penetrative qualities. **(No. 119a)**

U.S. INDUSTRIAL ALCOHOL CO.

WORLD'S LARGEST PRODUCERS OF INDUSTRIAL ALCOHOL

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NEWS

Associations

A.P.M.A. Meeting

The American Pharmaceutical Manufacturers' Association held its annual meeting at the Homstead, Hot Springs, Va., June 13 to 16. Carrol Dunham Smith was reelected president; James L. Dow, of the P. J. Noyes Co., Lancaster, N. H., first vice-president; Jesse L. Hopkins, of J. L. Hopkins & Co., second vice-president; Fred A. Lawson, of The E. L. Patch Co.,

C. D. SMITH
Re-elected President

re-elected secretary; Frank A. Mallet, of the Standard Chemical Co., Des Moines, reelected treasurer; Charles Wesley Dunn, continued as general counsel.

Members of the board of directors elected for the 1938-1941 term are: Floyd K. Thayer, of Abbott Laboratories; Samuel W. Fraser, of Burroughs-Wellcome & Co.; Fred W. Misch, of the Smith-Dorsey Co., Lincoln, Neb.

In his presidential address, Carrol Dunham Smith spoke largely on the unsatisfactory condition and the economic trends of the present time. He expressed the thought that the people of this country could find encouragement that can be found by the citizens of other countries of the world. Mr. Smith suggested what might be done and what might be avoided to bring a return to prosperity when he said:

"If we are willing to proceed with utter unselfishness, it would seem that perhaps a plan might be worked out to absorb unemployed labor, to bring capital out of hiding, and to promote prosperity. Possibly, we have a census showing the number of employers, and by employers I refer to the huge corporations, small businesses, individual one-man stores, farmers, and even those employing household servants. Suppose for argument that there might be 50,000,000 who might be termed employers of some sort, while there might be 12,000,000 unemployed, although I hope the number at the present time is less than that. To promptly bring about complete employment, every employer would have to make additional employment for six-twenty-fifths of a worker, or for one and one-fifth days of a five-day week. Or, it would probably be less of a burden if for every five employees, one and one-fifth were added to the payroll, the numbers and the proportions, of course, varying with the actual figures of the census.

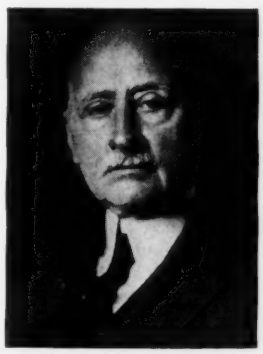
"To bring that about, employers would have to forego temporarily part or all of their profit, and employees might have to agree to less than union wages, but if it resulted in employment for all, it would very promptly result in increased demand for living necessities, and ultimately in increased demand for luxuries.

"Perhaps the plan is too visionary to be put into effect immediately or smoothly or totally, but it would seem as though some work in that direction might accomplish a great deal, and it certainly would accomplish a great deal if all the unemployed were promptly put back into private employment, eliminating the present heavy waste of WPA work—or rather WPA existence with very little work.

On the subject of employer-employee relations, Mr. Smith said:

"Our efforts to be more than right are advisable in other directions, notably in labor relations. It is frequently conceded that strikes result from very small causes that might have been eliminated, sometimes from a thoughtless act on the part of management that is irritating, sometimes from a discharge that seems unjustified, sometimes from the unwarranted discontent of one of the least important of employees.

"For the sake of being humanly decent, for the sake of avoiding actual labor trou-



J. L. HOPKINS
Vice-President

bles, and for the sake of eliminating strikes or plans that may lead to more drastic and more partial labor laws, it is of very real importance that we pay reasonable wages, preferably not less than 40 cents an hour; that we hold down the workweek to a reasonable term, preferably not more than forty hours; that we provide suitable working conditions, suitable safety appliances and regulations; and that we do our utmost to encourage by all acts and methods the cordial feeling of friendly cooperation throughout our plants, the willingness to discuss difficulties frankly and without detriment to the complainer, and an encouragement of suggestions on the part of employees. Two weeks' annual

"First in Glass"
Year after year Owens-Illinois forges ahead—leading the way to new comforts and conveniences for the public and new sales and profits for manufacturers. It has been the untiring research, development and perfection that have won for Owens-Illinois the enviable reputation of "first in glass." Owens-Illinois Glass Company, Toledo, Ohio.
OWENS-ILLINOIS
Salespackages

vacation with pay, and full pay during absence on account of sickness, will help.

"Out-of-work-hours plant activities, including baseball, football, soccer, bowling teams among the men—sometimes even the girls enjoy organized bowling—horseback riding, dancing, and so forth, or facilities and encouragement for improvement through study, might help.

"A little thoughtfulness and consideration on the part of management, even a kindly recognition, rather than a stuffed-shirt attitude, may help.

"Through our association work we have brought about marked improvement in our industry, both in personal relations, and through personal acquaintance and a sympathetic understanding of each other's difficulties and desires. Our continued contact and cooperation with government agencies has, we hope, brought about better understanding.

"Let us strive honestly and earnestly to carry on and further develop this good work. Let us not give way to doubt and despair, but push on with faith in America and with confidence that a good job carried on with intelligence and determination will inevitably win its just reward."

New members elected to the association during the year are: Active Members: Gelatine Products Co., Detroit; Hart Drug Co., Miami; Rare Chemicals Co., Nepera Park, N. Y.; White Laboratories, Inc., Newark, N. J. Associate Members: Ivers-Lee Co., Newark, N. J.; Ernst Bischoff, Inc., New York; National Oil Products Co., Harrison, N. J.; Cudahy Packing Co., Chicago.

Carle M. Bigelow, of the Calco Chemical Co., as Chairman of the Committee on Industry and Business policies, presided over the discussion of the following subjects: Use of Quantity Discounts and Free Goods in the Sale of Tablets; Factors influencing National or Local Distribution by a Company; Factors Influencing Promotion to Dispensing or Prescribing Physicians or Both; Reduction of Improper Diversion of Professional Samples; Employer-Employee Relations and Patent Rights in the Research Division.

The various members of the committee handled the different subjects, C. H. Nelson on distribution, J. H. Foy on selection of physicians, John G. Searle on small problems, Mr. Bigelow on employer-employee relations.

In a study of the practice of giving 1,000 tablets free with an order for 5,000, the committee had sought information on quantity discount policies and had found that nineteen members gave discounts only; four gave free goods; nine gave one or the other, and three had only a flat price. Discounts were found to range from 10 per cent. to 25 per cent., the first figure being the most prevalent.

Admitting the advantage of giving free goods to get larger use of a product and at a relatively low cost, the committee pointed out that the business trend is away from free goods and suggested an alternative discount plan.

Factors influencing the development of markets of a broader scope were reported to be direct mail, medical journals, and detail men or salesmen, a combination of all being considered most potent. Selection of the means was shown to depend on the size of the company and the nature of its sales organization.

Appropriate efforts had been found successful in developing a national market, although there were instances of difficulty in getting beyond local limits with certain highly competitive articles. The use of direct mail was noted to be inexpensive in relation to its productiveness.

Data were presented as a guide to determining the potential sales of a product, and the influence of the money available for promotive work was explained. It was emphasized that national distribution was not desirable for an article that would not pay for the necessary efforts.

Interpretation of the trend of physicians to dispense or to prescribe was said to be difficult, and the available data were not regarded as reliably indicative. The effects of economic conditions to increase dispensing were noted, and it was said that a physician's patients looked upon dispensing as a saving for them.

Reference was made also to the effects on physicians' practices of the propaganda for U.S.P. and N.F. drugs, and it was said that "the successful progress of such activities would undoubtedly increase dispensing." Specialties were believed to be not so well adapted to dispensing as are standard pharmaceuticals. The potential influence of the agitation for socialized medicine was noted because of concomitant fixing of charges.

The opinion was that, whatever field he chose, the manufacturer must be primarily concerned with the therapeutic value of his products and should make use of full research and clinical experimentation. This was tied into with the conclusion that the best policy is to regard the medical profession as a unit and to direct selling efforts to both dispensers and prescribers as such a course would assure greater permanency.

The problem of the diversion of samples from physicians to whom they are sent to "cheap" channels of trade in drugs has long been a troublesome one for pharmaceutical manufacturers. The value of sampling was evident, but the necessity of limiting it to its purpose of making physicians acquainted with a product was emphasized. Methods of checking the overgenerous distribution of samples by salesmen were outlined.

Particular mention was made of the stand taken by the Bergen County (N. J.) Pharmaceutical Association in its desire to prevent the unfair competition that results from the peddling of drug samples obtained at low cost from "begging" doctors. The pharmacists had expressed the belief that the prevalence of sample diversion was not known to manufacturers; the committee pointed out that they long had known this all too well. The pharmacists were complimented for their interest in the matter, and their suggestions were well received. They asked that samples be of sizes smaller than trade packages; that salesmen be required to report fully on their sampling and be limited to quotas that were sufficient for the desired promotion; that samples bear detachable labels. A question was raised whether this would comply with labeling laws.

It was the belief of the committee that the problem resolved itself to a matter of education in personal honesty and ethics—the Federal Trade Commission had given the information that the matter was not within the jurisdiction. Keeping close watch on outbreaks of sample peddling and going with explanations of its evils to those who let samples get into such channels were advised as necessary work. Honesty on the part of the manufacturer was stressed as also necessary, and the conslusion was that manufacturers, physicians, and pharmacists should be educated to appreciate the unethical aspects of lending any aid, actively or passively, to the commercial marketing of samples.

A comprehensive citation of literature on patent law and the chemist was given in the committee's discussion of employer-employee relations and patent rights in the research division. The importance of precautionary contractual terms in engaging an employee for research was stressed. It was pointed out how closely associated discoveries were held to be part of the purpose of contractual research, but new ideas and developments were outside the contract.

Information was given on the difference between inventorship and ownership and on shop rights, royalties, and other aspects of the question. Specimen contracts were submitted.

With respect to future work on policy the committee suggested that its personnel be selected early each year; that recommendations for consideration be made to it promptly by the cost, sales, production, research, or other groups of the association; that the subjects selected be made known to the members of the association as soon as possible, with requests for expressions on them; that the members of the committee confer for the examination and collation of data and the construction of conclusions.

Howard S. Roe, of the Carrol Dunham Smith Pharmacal Co., Chairman of the Committee on Sales Managers, discussed the hiring, training, and supervision of salesmen.

In hiring salesmen most companies look for a man closer to thirty than to forty years of age. Some will not hire a man who has worked for a competitor, believing that there must be reasons for his lack of

success. Others have a high regard for references from competitors. Mr. Roe placed himself in the former class. Opinions differed widely with respect to the relative value of pharmaceutical training and fundamental qualifications as a salesman. It was brought out that the possession or lack of pharmaceutical training on the part of the sales manager was a potent factor in setting his views. But there was a general belief that a "born salesman" can be given the necessary technical training more easily than a pharmacist can be taught to do a real selling job.

To reach prospective salesmen the mediums suggested, aside from newspaper or trade paper advertising, were sales managers in wholesale houses and pharmacy schools.

Intensive preliminary training for one or two weeks is customary, emphasis being laid on the desirability of avoiding exaggeration and of full knowledge of competitive conditions. Some companies give preliminary field training.

The use of appropriate questionnaires, of sales manuals, and of books and magazines on technical and selling subjects was commended. Continuous training by means of informative sales letters also was employed by some companies.

Although the majority of companies have no full-time supervisor of salesmen, the value of such a member was strongly attested by those who use this method. Mr. Roe related his gratifying experience with the supervisor plan, and said that he had found it best that this man came up from the sales force.

Charles P. McCormick, president of McCormick & Co., Baltimore, addressed the association on Multiple Management.

Mr. McCormick explained how his company is multiple managed by cooperating, coordinated boards separately representing management, junior executives, factory personnel, and sales personnel. The functions, as well as the constitution, of the several boards were outlined by Mr. McCormick, and he graphically depicted how their findings are carried through to operatives by way of the senior board.

The practical value of multiple management had been and is being demonstrated in his business, Mr. McCormick said. Its greatest value lay in its stabilizing influence on workers and its carefully and soundly applied effects to assure satisfaction on both sides. The basic element of the plan is frankness, he said; all cards are laid on the table and every effort is made to furnish information essential to the cultivation of mutual understanding and the assurance of confidence and respect. Misconceptions are cleared up as promptly as possible, and all grievances are sifted to the bottom.

Educational work is no small part of multiple management, Mr. McCormick said. Every endeavor is made to have all workers get the proper evaluation of themselves, of their direct associates, and of those to whom they are expected to look for supervision. Similarly, management endeavors to recognize the value of individual employees, and to be strictly guided by all relevant factors in the determination of compensation. Minimum wages have been substantially increased under the plan, and the higher scale has proved a good investment, Mr. McCormick said.

Various questions with respect to details of his system and its operation were answered by Mr. McCormick.

A brief review of legislative matters of the year was given by George R. Flint, of Flint, Eaton & Co., chairman of the committee on legislation.

This was supplemented by an interpretative discussion of the new Federal revenue act by Leo M. Cherne, director and executive secretary of the Tax Research Institute of America.

Charles Wesley Dunn, general counsel of the association, presented a voluminous analysis of the new food, drug, and cosmetic bill passed by Congress June 13 and of the Wheeler-Lee amendment to the Federal Trade Commission act, with special reference to the provisions of the latter legislation which have to do with the advertising of drugs.

Recommending that in the future its personnel be entirely men actually in charge of production, the committee on production, through Ralph R. Patch, chairman, suggested the following objectives:—

1. The promotion of acquaintance among production men, so that personal discussions of common production problems may be more fruitful. These problems would include all the ordinary processes used by most manufacturers, such as extraction and concentration of active principles; granulation, compression and coating of tablets, etc.

2. Increase in knowledge among production managers, so that there may be improvement in accuracy and efficiency of production of the industry as a whole.

3. Education of higher executives and a possible check-up on the production efficiency of their own organizations.

4. Benefits to each member because of the possibility of its production department being able to get assistance in solving its problems.

The year's work of the contact committee on drug standards, tolerances, and related matters with the Food and Drug Administration and the U.S.P. and N.F. revision committees, was reviewed by the chairman, Frank B. Fisk, M.D. In this committee the association is joined with the American Drug Manufacturers Association.

Work on vitamins in fish oils, assay of mydriatic alkaloids and acetylsalicylic acid tablets, standard for aloe, moisture in drugs, assay of methylene blue, ephedrine salts, and sulfanilamide tablets, was covered by the report. Reference was also made to the appointment of a committee for a study of enforcement of the North Dakota drug law. Certified colors for drugs had also been studied.

The committee had urged upon the U.S.P. and N.F. committees the desirability of interim revisions of official standards, and it was recommended that plans be laid for getting information on changes to manufacturers promptly, and it was urged that, these standards being part of the Federal and State drug laws, all who are obliged to work under these laws should be given prompt information on proposed and considered changes, as well as those adopted.

Dr. C. E. Vanderkleed reported for the committee on catalog simplification. Work of the research board was reviewed by its chairman, George W. Ewe. The research application committee reported through S. W. Fraser. David A. Bryce, M.D., discussed the role of the medical director in the commercial development of new products. Progress in the compilation of the history of the association was related by B. L. Maltbie.

Technicolor motion pictures were shown by Dr. E. G. Guenther, of Fritzsche Brothers, Inc., and Dr. Roy Lyman Sexton.

Foragers Outing

The Foragers of America held their annual outing on Saturday, June 25. The outing followed the same schedule as it has for many years. The members went by Sandy Hook Steamer, train, and bus to Green Gables, Monmouth Beach, N. J., accompanied by a band. Upon arrival the members dove into bowls of chowder and glasses of beer.

Next the sports program was organized, starting with potato race, three legged race and other contests. The annual baseball followed this. Then the members sat down to a shore dinner, following which they left for home by bus, train, and Sandy Hook Steamer. Attendance was good, and members enjoyed themselves as they always do at the annual outing.

Brewer Heads Ad Directors

A. Douglass Brewer, of Ciba Pharmaceutical Products, was elected president of the Pharmaceutical Advertising Directors Club, succeeding Douglas Wakefield Coutlee, of Merck & Co., who headed the club for the past two years. Other officers elected at the fourth annual meeting held June 28, are: vice-president, Edward B. Austin, Thomas Leeming & Co.; treasurer, E. Walton Bobst, Hoffmann-La Roche; secretary, Edward A. H. King, Crookes Laboratories.

Retiring President Coutlee reported that membership had increased from thirty-four to forty-six with most of the leading pharmaceutical houses represented. The annual meeting was followed by dinner and entertainment in charge of a committee composed of Dr. Robert E. Spline, Bristol-Myers Co., A. Douglass Brewer, and Edward A. H. King.

WHEN TRADE TRENDS VARY WITH THE WEATHER

A partial list of Tonnage Fine Chemicals held under rigid control, at no price premium.

- Alkali Bromides
- Potassium Iodide
- Magnesium Oxide
- Cream of Tartar
- Bismuth Subcarbonate—Subnitrate and other Salts
- Caustic Potash and Soda Sticks and Pellets
- Rochelle Salt
- Lead Acetate
- Salicylates

MANUFACTURERS of drug and cosmetic products who depend upon short seasons for sales, select their Fine Chemicals with infinite care. This need for the utmost in quality has led many pharmaceutical manufacturers to the J. T. Baker Chemical Co., pioneers of measured purity.

No chemical company has a higher reputation for quality than Baker. For over 30 years, Baker's C.P. Analyzed Reagents have been selected by the nation's leading chemists, scientists, and the medical profession for exacting work.

Likewise, many of the best-known ethical products, prescribed by physicians and dispensed by pharmacists, are compounded with Baker Chemicals. Of the nationally advertised drugs and cosmetics, from cold remedies to facial creams, from laxatives to lipsticks, the quality of Baker's Fine Chemicals has a definite part in their popularity.

There are still hundreds of firms manufacturing drugs and cosmetic items who have yet to discover that Baker manufactures fine chemicals as well as laboratory reagents. If your company has a product to keep the public well or make them well, we invite you to talk your problems over with the Baker representative. The quality of Baker's Fine Chemicals, at no price premium, will do the rest of the selling.

J. T. BAKER CHEMICAL CO., Phillipsburg, New Jersey

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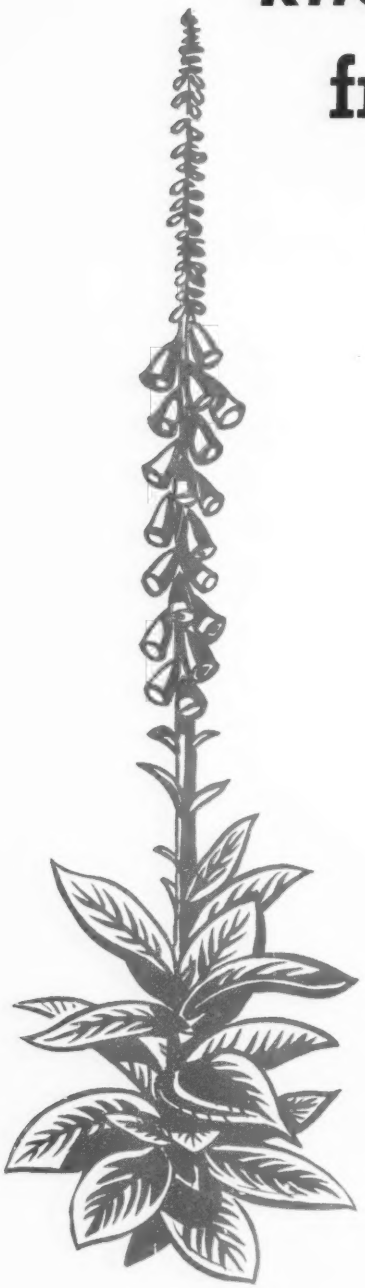
420 Lexington Avenue

PHILADELPHIA
220 South 16th Street

CHICAGO
435 North Michigan Avenue

Baker's fine chemicals

S. B. Penick & Company
knows Botanicals
from the ROOTS up . .



EVERY step in the production of Penick botanicals is carefully supervised—the gathering, cleaning, re-cleaning, grading, drying, curing and packaging. Our laboratory control enables us to offer you reliably tested botanicals.

SERVICE is teamed with quality in the house of Penick. Well supplied warehouses are strategically located for rapid delivery. Far-flung facilities often enable us to secure for our customers, botanicals needed in a hurry and unobtainable elsewhere.

COMPLETE stocks of drug and cosmetic materials are always on hand for prompt shipment, including such items as:

HENNA	"EIDERDOWN" SOAP
ORRIS ROOT	QUINCE SEED
ROSE BUDS	LYCOPODIUM
LAVENDER FLOWERS	CASCARA SAGRADA
RHUBARB ROOT	BENZOIN
HYDRASTIS	SENEGA
SANDALWOOD	ERGOT
DIGITALIS	SENNA

Available from one reliable source are Gums, Fish Liver Oils, Extracts, Alkaloids, Crude Botanicals, Insecticide Bases, and Cosmetic Raw Materials.

S. B. PENICK & COMPANY

132 Nassau Street, New York — 1228 W. Kinzie Street, Chicago

THE WORLD'S LARGEST BOTANICAL DRUG HOUSE

Which GUM and what GRADE?

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Specialists in Water Soluble Gums

Our long-experienced Gum Department specialists can advise you intelligently on the right gum and grade to use for any desired purpose. If a less expensive gum will do the job—if a more economical grade will serve—they'll tell you.

Penick Gums are produced from highest quality raw materials. Customers are assured of maximum gum performance for the price paid.

Day to day contact with producers at the source of origin often enables us to warn you of impending crop disturbances and price changes. Our complete line of stocks offers you the advantage of obtaining any particular grade of gum for prompt delivery.

TRAGACANTH	**LOCUST**
ARABIC	**GHATTY**
KARAYA	**TAHLA**

Samples and Quotations Upon Request

Whole and milled, special grades can be prepared to specifications.

S. B. PENICK & COMPANY

132 Nassau Street, New York — 1228 W. Kinzie Street, Chicago

THE WORLD'S LARGEST BOTANICAL DRUG HOUSE

VANILLIN MONSANTO

The standard of America

When you use **Vanillin Monsanto**, you build on a sound foundation of ***known quality***, backed by experienced service and a dependable supply.

VANILLIN MONSANTO

Standard of America in Purity, Whiteness, Full Flavoring Strength, True Aroma, Uniformity, Freedom from By-Odors, Reliable Source of Supply, Convenient Packing, Low Cost.

Other Products include:

COUMARIN MONSANTO, METHYL SALICYLATE MONSANTO (Oil of Wintergreen Synthetic)

Manufactured by

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ST. LOUIS, U.S.A.

NEW YORK • CHICAGO • BOSTON • BIRMINGHAM • CHARLOTTE
DETROIT • SAN FRANCISCO • LOS ANGELES • MONTREAL

Essay on Quinine

The American Association for the Advancement of Science, Washington, in cooperation with the Cinchona Products Institute, New York, is sponsoring a nationwide essay contest on the subject "Quinine in History." The contest is open to students in the third and fourth years of high school and three prizes will be awarded. The first prize is a fully paid university scholarship; the second is a trip to Amsterdam, Holland, the quinine center of the world, and the third will be announced later.

Plastic Society Officials

The Society of the Plastics Industries has elected the following new officers; president, Allan Fritzsche, General Industries, Elyria, O., vice-president, Donald Dew, Diemolding Corp., Canastota, N. Y., secretary-treasurer, W. L. Kelly, Chicago Molded Products Corp., Chicago.

Sulphonated Oil Golf

The annual golf outing of the Sulphonated Oil Manufacturers Association was held at the Seaview Golf Club, Absecon, N. J., June 1 and 2. The association's golf cup was won by E. S. Atkinson.

Chemical Society Meets

The Society of Chemical Industry held its annual meeting in Ottawa, June 20 to 22. During the annual meeting joint sessions were held with the Canadian Institute of Chemistry and the Canadian Chemical Association.

Cosmeticians to Meet

The annual convention and exposition of the American Cosmeticians National Association will be held at the Stevens Hotel, Chicago, September 12, 13, 14 and 15. More than 8,000 beauty shop owners, managers, and operators are expected to attend.

Chemical Golf Winners

At the first golf tournament of the Chemical Salesmen's Association held, June 14 at the Baltusrol Golf Club, Short Hills, N. J., the low net prize was won by Charles Slater of the J. T. Baker Chemical Co. The low net prize for guests was won by Joseph de Raismes of the Bakelite Corp. Other prizes were won by Edward S. Burke and De Witt Thompson, of the Mathieson Alkali Works, and Donald Campbell.

Chicago Golf Winners

Winners in the second tournament of the golf auxiliary of the Chicago Drug & Chemical and the Chicago Perfumery, Soap and Extract Associations were: Class A.—1st, Thomas Morgan, 2nd, Tom Gilson, 3rd, H. L. Derby, 4th, T. B. Singleton; Class B.—1st George Epstein, 2nd, A. J. Anderson, 3rd, H. V. Wallace, 4th, C. C. Marshall; Class C.—1st, J. A. Gauer, 2nd, C. M. Baldwin, 3rd, F. S. Topper, 4th, W. H. Schutte; Class D.—1st, A. J. Ratz, 2nd, W. R. Nay, 3rd, K. Tpraker, 4th, A. R. Frantz; Guest—1st, J. Wood, 2nd, W. L. Schulze, 3rd, W. A. Rothermel, 4th, J. C. Ocen.

The third tournament in the series was held at Medinah Country Club, July 12.

Symmes Heads F.E.M.A.

At the annual meeting of the Flavoring Extract Manufacturers' Association held at the Hotel Traymore in Atlantic City June 27 to 29, L. P. Symmes of Baker Extract Co., Springfield, Mass., was elected president. Other officers elected were: first vice-president, Clarke E. Davis of the Virginia Dare Extract Co., Brooklyn; second vice-president, John Beach of Seeley & Co., New York; third vice-president, E. P. Price of the Favoring Extract Co.; secretary, E. L. Brendlinger of the Dill Co., Norristown, Pa.; and treasurer, Leslie Beggs, of Stryon, Beggs & Co., Newark, N. J. George M. Armor of McCormick & Co., Baltimore, retiring president, was elected to the executive committee.

Landis on Inflation

Dr. Walter S. Landis, vice-president of the American Cyanamid Co., addressed the Drug, Chemical and Allied Trades Section of the New York Board of Trade at the Hotel Pennsylvania, New York, June 21, on the subject of Inflation. Dr. Landis told of the experiences of European countries with currency inflation. He stated that the debts of this nation will never be paid in dollars valued as high as they are at the present. Thomas R. Farrell, editor of THE DRUG AND COSMETIC INDUSTRY, introduced Dr. Landis.

Bomer on Australia

At the annual meeting of the Export Managers Club of New York, Inc., held at the Hotel Pennsylvania, June 15, Walter L. Bomer, vice-president of Bristol-Myers Co., spoke on the technique and methods of Australian advertisers. He said that Australian advertising is similar to American advertising and pointed out instances in which American technique had been adopted.

Chemists' Club Elects

At the thirty-ninth annual meeting of the Chemists' Club of America, William Callan, of the Casein Manufacturing Co. of America was reelected president. The other officers elected were: resident vice-president, A. E. Marshall; non-resident vice-president, E. R. Weidlein, of Mellon Institute, Pittsburgh; suburban vice-president, R. J. Moore, of the Bakelite Corp.; secretary, R. T. Baldwin and treasurer, S. J. White, of the Electro-Bleaching Gas Co. D. P. Morgan of Scudder, Stevens & Clark, and E. W. Herr, of the Darco Sales Corp. were elected trustees for three years and Nelson Littell, of Hammond & Littell, was made a trustee for one year.

Committee chairmen were appointed as follows: admission, R. W. Hooker, of Hooker Electro-Chemical Co.; welfare, John A. Chew, of John A. Chew, Inc.; employment, J. M. Weiss, of Weiss & Downs Co.; library, Carleton Ellis, of Ellis-Foster Co., and finance, Frederick Kenny.

Companies

Baker & Adamson Catalog

Baker & Adamson, division of General Chemical Co., New York, has issued a 258-page catalogue of the fine chemicals and laboratory reagents offered by the company. The chemicals listed in the catalogue are classified as "Reagent" grade, the highest grade, conforming in most cases to the specifications of American Chemical Society; "C. P." Grade, a quality which, though not equal to the "Reagent" grade is suitable for ordinary routine use in industrial and educational laboratories: "U. S. P." Grade and "N. F." Grade.

Merck Nicotinic Acid Book

A "Merck Service Bulletin," dealing with Nicotinic Acid Merck, has just been issued by Merck & Co., Rahway, N. J. The bulletin describes the physical characteristics of the product, chemical formula, melting point, stability, solubility, etc., and points out the place of Nicotinic Acid in the Vitamin B Complex and discusses its use in the treatment of pellagra. Copies of the bulletin are available to drug manufacturers upon request.

Roure-DuPont Catalog

Roure-Dupont, Inc., has issued a new and colorfully printed catalogue and price list. Sections of the booklet are devoted to Synthetic Chemicals and Isolates; Parfums de Synthese from Justin duPont; Specialties for Extracts and Lotions; Specialties for Creams and Powders; Natural Floral Products from Roure-Bertrand Fils, Grasse; Essential Oils; Resinoids and Terpeneless Oils. Copies are available upon request.

Zimco Vanillin Folder

Zimco Vanillin is a synthetic vanillin produced by a new process from spruce and other coniferous woods. It is produced at the plant of the Salvo Chemical Corp. in Rothschild, Wisc. which is said to be the largest plant in the world devoted solely to the manufacture of vanillin. Zimco Vanillin is distributed by General Drug Co., and Fritzsche Brothers, Inc. A folder telling of the product and the process is available upon request.

Twelve Million Lips

wear Kolmar Lipstick today—and will come back for more tomorrow

BECAUSE THEY LIKE IT

That is all! All our research and scrupulous attention to manufacturing details have one result . . . They like it and come back for more.

You, too, will like it, when your lipstick sales climb on the wings of customer satisfaction as assured by Kolmar Perm-Indel Lipstick.

Write for samples of our newest composition which has been acclaimed "the finest lipstick ever produced".

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LABORATORIES
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Manufacturers of cosmetics for private label brands only. We never compete with our clients. We also protect the interests of our trade by Products Liability Insurance.

These Kolmar Representatives are ready to serve you:

M. C. Boyd, 100-108 River Street, Hoboken, N. J.
Norman Kole, 11-108 Merchandise Mart, Chicago, Ill.
Warren Curry, 2895 Peachtree Rd., Atlanta, Ga.
R. G. F. Byington, 155 N. Vermont Ave., Los Angeles, Cal.

Brunswig Drug 50 Years Old

The Brunswig Drug Co., Los Angeles, has been celebrating its fiftieth anniversary. Lucien P. Brunswig is president of the company which was started as F. H. Braun & Co., in May, 1888.

Mr. Brunswig, a native of France, came to this country as a young man and, after serving an apprenticeship and working as a prescription clerk, he opened his own drug store in Atchison, Kansas. Later he moved to Fort Worth and opened a wholesale drug house in connection with his retail store. He was soon offered a partnership in the Finlay Drug Co. of New Orleans which later became Finlay & Brunswig. This connection lasted for twenty years and Mr. Brunswig assumed complete charge of the business upon the death of his partner. He had, in the meantime opened a branch in Los Angeles, F. H. Braun & Co. When he purchased the interest of his partner, F. H. Braun, the name was changed to Brunswig Drug Co.

The company which has branches in San Diego, Phoenix and Tucson now operates twenty-two drug stores.

Norwich Advances Brennan

Thomas A. Brennan is now manager of the Chicago branch of Norwich Pharmacal Co. In this position he succeeds Frank L. McCartney who is now president of the company. Mr. Brennan has been for the past fourteen years in charge of the Kansas City branch of the Norwich Pharmacal Co. Prior to that he was a local salesman working out of the Kansas City office.

Charles of The Ritz Protects Name

By a final consent decree Ike Kempner & Bros. Inc., and Charles Thomas Cartwright of Little Rock, Ark., have been permanently enjoined "from using the trademarks and names Charles of the Ritz, or Charles at the Ritz, or any name or combination, which includes the word Ritz as a part thereof, as trade name of a beauty or hair dressing salon."

The gist of the complaint of Charles of the Ritz brought in the U. S. District Court for the Eastern District of Arkansas consisted in the complaint that the defendants were using the name Charles, Ritz Beauty Salon and as result of the decree, this use has been stopped.

Levy Restrained

As a result of suits brought in the United States District Court for the Eastern District of Pennsylvania by Bourjois, Inc., and Coty, Inc., Judge William H. Kirkpatrick issued an order on June 15 restraining Lewis D. Levy, individually and trading as the Imperial Co. of 109 N. 6th st., Philadelphia, from rebottling the plaintiff's Eau de Toilette and Eau de Cologne in a manner considered a violation of trademark rights and unfair competition.

Armstrong Raises Stevens

F. E. Stevens, formerly assistant general manager of the Industrial Division of Armstrong Cork Co., Lancaster, has become general manager, succeeding the late S. E. Conybeare. W. B. Tucker is now assistant general manager and R. M. Hill is assistant manager of the division.

Parento Moves in Chicago

Compagnie Parento, Inc., have moved their Chicago office to 537 South Dearborn St. E. J. McBrady, well known in the industry throughout the Middle West, is in charge.

Sterling Buys Vita-Ray

Vita-Ray Co., Lowell, Mass., with branch offices in New York and Chicago, has been acquired by Sterling Products, Inc.

Gulick Now Board President

Charles P. Gulick, founder and president of National Oil Products Co., Harrison, N. J., has been elected to fill the newly created position of president of the board. John H. Barton, formerly vice-president, succeeds Mr. Gulick as president. Thomas A. Printon, formerly general sales manager of the industrial division, is now vice-president in charge of industrial sales.

Other officers are: vice-presidents, Perc. S. Brown and G. Daniel Davis; treasurer, Ralph Wechsler and secretary Albert A. Vetter.

Potter & Moore Open Here

An American branch of Potter & Moore Ltd., Inc., has been established with offices at 101 West 31 st., New York. Frank Pull, who has been associated with Potter & Moore for several years, the last six of which have been spent in this country, will be general manager of the American branch and A. Reddington-Samuels will be in charge of sales. Mr. Samuels until now managing director of Potter & Moore, Ltd., Canada, has been associated with the company for the past twenty-five years and is a member of the third generation in his family to work for Potter & Moore.

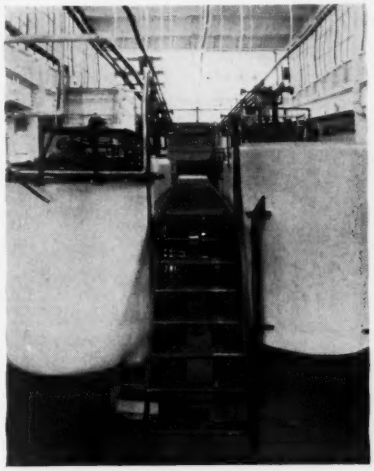
The Potter & Moore line of bath luxuries and accessories for men and women has been re-packaged for the American market. The new packages were displayed for the first time at the convention of the Oregon and Washington Pharmaceutical Associations in Seattle, July 11 to 13. Mr. Pull and Mr. Samuels both went to the coast to attend this convention.

Felton Appoints in Canada

Felton Chemical Co., Brooklyn, has announced the appointment of a new Canadian representative, the Lewis-Adcroft Co., 353 St. Nicholas st., Montreal. The company will conduct a sales agency for Felton in the entire dominion and will carry complete stocks of Felton aromatics, raw materials and flavoring materials.

Bopf-Whittam Plant

Below we show a view of part of the plant of the Bopf-Whittam Co., Linden, N. J. In this recently equipped plant, the company refines lanolin under ideal conditions, the cleanliness of the plant being



particularly noticeable. The picture shows two batteries of refining tanks, the refining process carrying the lanolin through the successive tanks in each battery.

Loeser Laboratory Expanding

Loeser Laboratory, Inc., which purchased Colwell Pharmacal Corp., on April 15 last, is now located in more spacious quarters at 37 West 26 st., New York. Loeser Laboratory is a pioneer manufacturer of parenteral medications. In addition to the complete line of Colwell glandular products, a number of specialties, to be announced shortly, have been added to the Loeser list. The company states that it now has the largest line of parenteral items of any house in the country.

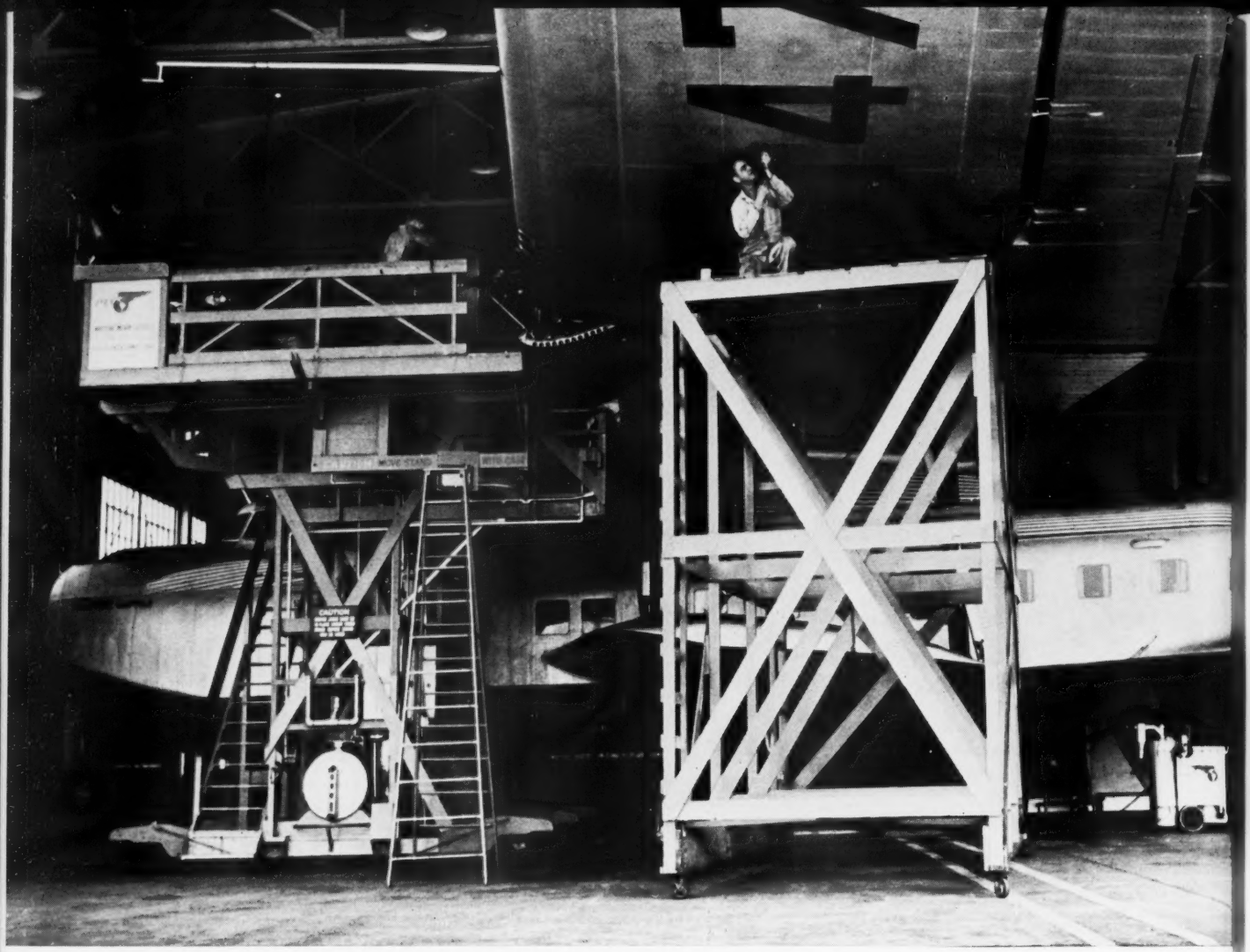
After thirty-five years with Sharp & Dohme, R. C. Ringgold is now president of Loeser Laboratory. R. W. Wilson, Jr., formerly with Colwell, is vice-president in charge of sales. D. Loeser, founder of the firm, continues as vice-president. W. Barsch, chief chemist, directs a large staff of workers in the 12,000 square feet of laboratory space, which houses much new equipment and a larger personnel.

Lillico Moves in Toronto

Wilfred Lillico, managing director of Lillico Ltd., Toronto, has announced that the company has moved to new and much larger quarters at 77 Wellington st., West, that city. Lillico Ltd. is sole Canadian distributor for Parfumerie de Raymond, Ogilvie Sisters, Vita Ray Corp. and others.

Coty Gets Back Taxes

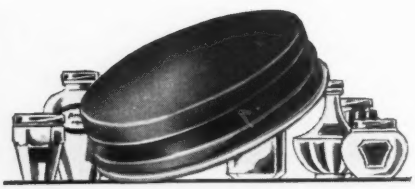
Coty Inc., New York, has been awarded a cash refund of $37,667 for overpayment of Federal income taxes in 1932 and 1933.



One of Pan American Airways' Clipper Ships being overhauled at Alameda, Cal. before its long trip to Honolulu

Courtesy Pan American Airways

WHERE *Precaution* IS PRICELESS



CROWN CLOSURES

"BETTER SEALING FOR BETTER BUSINESS"

SCREW CAPS
V. P. O. CAPS
MASON CAPS
DOUBLE SHELL CAPS

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CROWNS
LUG CAPS
VACUUM CAPS
CAPPING MACHINERY

FLYING a great clipper ship is no "get-in-and-go" proposition. Before each trip, the ground crew checks every part of her mechanism and every inch of her surface. The utmost care and precaution is used to prevent any chance of mechanical failure. ♦ CCS uses the same foresight and care in making Crown Closures for you. Raw materials are checked and re-checked. The product is rigidly inspected at every step. Nothing is overlooked to insure uniform quality, unvarying accuracy and maximum sealing efficiency in every CROWN Closure. ♦ Your hunt for better sealing is ended when you come to CCS for closures. Get samples and compare them. They are yours for the asking.

CROWN CORK AND SEAL COMPANY • BALTIMORE, MD.

World's Largest Makers of Closures for Glass Containers

Pepsodent Park

A plot of ground 100 by 225 feet was dedicated by the Pepsodent Co., Chicago, June 15 as a park for employees of the company. Pepsodent Park, located south of the company's Clearing plant at 6901 West 65th st., was developed as part of a program which included rearrangement of offices, addition of new offices, installation of air conditioning and the erection of a cafeteria. These changes were made when the general offices of the company were moved to the Clearing plant.

Lilly Moves in Kansas City

The Kansas City branch of Eli Lilly & Co. has moved into new quarters at 819 Broadway, Kansas City, Mo. This branch is said to have been the first pharmaceutical branch office in the United States, having been established by Eli Lilly & Co. in 1881. The branch now occupies a seven-story building of reinforced concrete and steel.

Davis Bros. Buys Acme Wholesale

Davis Brothers Drug Co., Denver, has purchased the entire stock and business of Acme Wholesale Drug Co., that city. Louis A. and Bertha Charsky, formerly of the McKesson & Robbins Colorado Wholesale Drug Co., were the owners of the Acme company.

George in Charge of Hospitals

J. G. George, of Columbus, Ohio, a representative for the Mallinckrodt Chemical Works, is now in charge of hospital promotion work for Mallinckrodt in twenty states.

Hickey Joins General Shaver

Edward V. Hickey is now general sales manager for General Shaver Corp., Remington Rand Electric Close-Shavers, Bridgeport, Conn. He was formerly general sales manager of Gillette Safety Razor Corp.

Read Machinery Officials

The annual meeting of the Read Machinery Co., Inc., York, Pa., was held June 16 at which time Daniel H. Blizzard of Philadelphia, John N. Mackall of Baltimore and Frank G. Smith of Philadelphia were re-elected to the board of directors for another three year period.

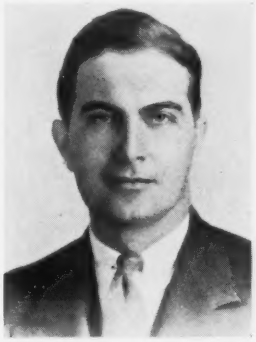
Officers of the company were re-elected as follows: chairman of the board, George L. Medill; president, James T. Duffy, Jr.; vice-president and treasurer, T. F. Freed; secretary, J. A. Eades; vice-president and assistant secretary, J. I. Spangler; assistant treasurer, L. W. Sipe.

Scott & Browne Appoints Breen

J. F. G. Breen has been appointed assistant sales manager of Scott & Bowne Vitamin Corp., Bloomfield.

Baxter Joins No-Kap

Elton C. Church, president of No-Kap Closures (U.S.A.) Inc., Providence, R. I., has announced the appointment of Kenneth Baxter as an executive of the company. Mr. Baxter, who is a son-in-law of



KENNETH BAXTER

the late Captain Albert H. Church, former managing director of No-Kap Closures (U.S.A.) Inc., sailed for London, June 11. He expected to spend about a month in connection with the business of No-Kap Closures Ltd., the British affiliate of the company.

Private Label in Africa

H. R. Hudson, has organized the H. R. Hudson Manufacturing Co., in Durban, South Africa, for the manufacture of drug and cosmetic products under private formulae. The factory, which will be completed in October, will be devoted exclusively to the manufacture under license of the products of overseas proprietors. The company will have no lines of its own, and will only manufacture medicinal, toilet, and cosmetic preparations under contract.

The market for which the company will manufacture products has an increasing white population of a million and a half, in addition to vast numbers of natives of India and colored people beside the large native population, a great number of whom are rapidly becoming sophisticated.

Mr. Hudson is the president of the Natal Pharmaceutical Society, and has held the position of chief chemist of Allen & Hanburys (Africa) Ltd., from 1921 until the present. He was educated in England, having been born in Hull in 1896. He has been an examiner for the South African Pharmacy Board since its inception in 1929. He has made a special study of cosmetics and is by way of being an authority in South Africa, having given a series of lectures on cosmetics at the request of the Natal Technical College.

McK. & R. Advances Geary

William Geary, assistant manager of McKesson & Robbins, Inc., Sacramento, has been made office manager of McKesson & Robbins, Los Angeles office.

Houbigant Sales Convention

The semi-annual sales meeting of Houbigant Sales Corp. representatives, was held during the week of June 20. All national representatives were present at meetings addressed by Pierre Harang, general sales manager, at which future sales plans were discussed. Other features during the week included a yachting party, luncheon and entertainment on June 22.

Parfums Lengyel Moves

Parfums Lengyel, Ltd., New York, has moved to 680 Fifth ave. where it will occupy the sixth floor.

Stokes Agent for Molding Presses

F. J. Stokes Machine Co., Philadelphia, is now sole sales agent for the complete line of Standard Plastic Molding Presses made by Standard Machinery Co., Mystic, Conn.

These presses are said to effect substantial savings in the molding of thermosetting plastics, mechanical rubber goods and in other fields. They are quick-acting, low-power, toggle-type presses in which hydraulic pressure to the toggles is exerted by a duplex pumping system, operating at low pressures that affords precise and simple control of both pressure and stroke.

Join Pfaltz & Bauer

Frank L. Caron and Arthur Smith are now associated with Pfaltz & Bauer, Inc., in the chemical sales division. Mr. Caron, a graduate of Massachusetts State College, was formerly New York representative for the J. T. Baker Chemical Co. Mr. Smith, a graduate of Massachusetts Institute of Technology, has had wide experience in many industries using industrial and fine chemicals.

People

G. W. Merck Receives Degree

At the 116th annual commencement of the Philadelphia College of Pharmacy and Science held June 8, the honorary degree of Master in Pharmacy was conferred upon George W. Merck, president of Merck & Co., Rahway, N. J. The degree was given to Mr. Merck in recognition of his services in the fields allied to public health in the development of newer medicinals.

Staff Allen's English Distilled Oils

Character, experience and ability in the important matter of producing Quality Oils

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LONDON ENGLAND

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LAVENDER
NUTMEG
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PATCHOULY
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SANDALWOOD

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13-15 W. 20th ST., NEW YORK

Philadelphia Boston San Francisco Toronto Houston
Chicago St. Louis Los Angeles New Orleans

Stewart Retires from Anchor

I. R. Stewart, chairman of the board of Anchor Hocking Glass Corp., has announced his retirement as of May 1. In 1911 he began his connection with the company which was to become the Anchor Hocking Glass Corp. In that year he took over the helm of the Sure Seal Cap Co. and in consequent organizations and mergers the Capstan Glass Co. of Connellsville, Pa., the Paragon Cap Co., the American Metal Cap Co., the Salem Glass Works of Salem, N. J., and more recently the Hocking Glass Co. of Lancaster, O., and its subsidiaries.

Mr. Stewart was one of the founders of the Glass Container Association.

H. Q. Mills, formerly vice-president of the Anchor Cap & Closure Corp. and the Capstan Glass Co. with headquarters at Long Island City, N. Y. is now making his headquarters at the San Francisco office, 230 California st.

Paul Douglas Back in New York

Paul Douglas, vice-president of Bourjois, Inc., New York, returned June 6 from a six weeks' stay abroad during which he visited the Paris and London offices of Bourjois.

Helena Rubinstein Weds

The announcement of the marriage of Madame Helena Rubinstein of New York, Paris, and London, and Prince A. Gurielli-Tehkonik of Paris was made on June 21 from the home of Madame Rubinstein in Paris.

Prince and Princess Gurielli plan to come to New York in July, from where they will proceed to Australia and back again to Europe by the way of the Orient and Egypt.

Ringel To Europe

George L. Ringel, vice-president of Fritzsche Brothers, Inc., New York, sailed June 18 on the Conti di Savoia, accompanied by Mrs. Ringel, his sister-in-law, Mrs. Margaret Parks, and the latter's daughter, Suzanne. Arriving at Naples, they plan to visit the Fritzsche Brothers' extraction plant at Seillans, France. For Mr. Ringel, the trip will combine vacation and business. He expects to return on the Queen Mary in about six weeks.

Johnson on Labor Trends

In a speech delivered before the Labor Institute at Rutgers University, Robert W. Johnson, chairman of the board of Johnson & Johnson, New Brunswick, N. J. said that American industry will have to be sold on the idea of shorter hours and higher wages. He characterized the new wages and hours bill as a "weak start in a good direction."

Bertie Joins Bertie-D'Uchizy

Henri Bertie is now associated with the Bertie D'Uchizy organization in New York. He is a son of Mme. Bertie and was previously associated with the Bertie-Paris organization.

J. Leslie Hindle Visits Here

J. Leslie Hindle, managing director of Standard Synthetics, Ltd., London, paid a visit to this country accompanied by Mrs. Hindle last month. While the trip was primarily for pleasure, Mr. Hindle was taking steps leading toward the appointment of an agent in this country to handle the products of his company. Standard Synthetics, Ltd. are essential distillers and producers of such products as terpeneless oils of lemon, lime, and orange, geraniol, lynalyl acetate, geranyl acetate, and perfume bases.

J. LESLIE HINDLE

Forter to Head Rubinstein in London

Boris (Kougoulsky) Forter, has been made general manager of Helena Rubinstein, Ltd., London. He will sail for England about the middle of July.

Bernard D'Escayrac Abroad

Bernard d'Escayrac, vice-president of Guerlain, Inc., New York, sailed June 22 on the Ile de France, for a six weeks' visit to France.

Count Armfelt To Coast

Owing to increased activity on the coast Mme. Schiaparelli has appointed Count Waldemar Armfelt to represent her perfume line in the far west. He is making his headquarters in Los Angeles.

Rosendahl to Europe

Edward Rosendahl, vice-president and general manager of Glyco Products Co., New York, sailed June 22 on the Ile de France for a business trip to Europe.

Procter & Gamble Dentifrice

Procter & Gamble has announced that a new liquid dentifrice will shortly be added to its drug store line.

H. J. Schnell Receives Degree

At the commencement exercises of the New Jersey College of Pharmacy of the University of Newark, June 8, the honorary degree of doctor of pharmacy was conferred upon Harry J. Schnell, editor of the *Oil, Paint and Drug Reporter, Druggists Circular* and *National Painters Magazine.*

Florence Wall Courses

A course in Cosmetic Hygiene and one in Teaching of Cosmetology will be given by Florence E. Wall during the last two weeks of the summer session (July 25 to August 5) at the Stout Institute, Menomonie, Wisc.

Willats in Alaksa

H. P. Willats, president of Colonial Dames, Hollywood, with Mrs. Willats, sailed recently on the "Aleutian" for Alaska. Mr. Willats expects to combine business with pleasure on the trip.

Jean Gondran to Europe

Jean Gondran of Antoine Chiris Co., New York, sailed for France, June 17. He will visit the parent company in Grasse, returning to this country early in Sept.

Leonhardts Return

F. H. Leonhardt, president of Fritzsche Brothers, Inc., New York, and Mrs. Leonhardt returned from Europe June 16 on the Conti di Savoia.

Retire from Sharp & Dohme

W. H. Hersey, Justus Dohme and C. C. Neal, associated with Sharp & Dohme for many years have retired from active service.

Dorothy Gray Cited

The Federal Trade Commission has issued a complaint against Dorothy Gray, Ltd. and Dorothy Gray Salons, New York, and Lehn & Fink Products Corp., Bloomfield, N. J. The complaint charges the companies with unfair competition in claiming that the vitamin D contained in their products is directly beneficial to the skin; that their creams containing vitamin D make the skin softer, smooth out wrinkles and clear the pores of dirt. The complaint also objects to the claim that the creams stimulate the skin tightening relaxed muscles and lubricate it strengthening it against wrinkles.

Lever Agrees With F.T.C.

Lever Brothers Co., Cambridge, Mass., has entered into a stipulation with the

PREPARED FROM
THE FINEST
MATERIALS AND
ENTIRELY FREE
FROM ADULTERANTS

PRICE'S *triple pressed* STEARIC ACID is used by leading manufacturers of the finest toilet preparations, shaving creams and toilet soaps.

Of guaranteed English manufacture, it is highly crystalline and white in color.

Melting point is 130°-133° Fahrenheit.

World famous for its unvarying uniformity in quality.

Packed in slabs of about one inch thickness in double burlap bags with a third protective inner bag forming a muslin liner.

Quotations for carloads or less upon application to exclusive American Representatives:

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Water Soluble Gums	Waxes	Cosmetic Raw Material	Fruit Flavors
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Aromatics	Essential Oils	Perfume Bases	Quince Seed
Rice Starch	Zinc Oxide French	Olive Oil	Irish Moss

MANUFACTURED BY PRICE'S OF LONDON, ENGLAND

Federal Trade Commission by which it agrees to discontinue representations that Lifebuoy soap will improve the skin 100 per cent., or any other definite percentage in any substantial number of cases, and that Lux toilet soap will keep the complexion flawless. The company will also cease to claim that "Lifebuoy soap or Lux toilet soap can be relied upon to keep the skin clear, unless this assertion is limited to such conditions as are due to, or aggravated by, dirt, cosmetic residue, epithelial debris, or foreign matter."

Merck Reply To F.T.C.

Merck & Co., Rahway, has filed an answer to the Federal Trade Commission charge of price discrimination in its sales to wholesalers.

The company explains that it markets its products to wholesalers and to distributors and that on reagent and C. P. chemicals a price about 13 per cent. lower is quoted to distributors. The company maintains that this is only fair inasmuch as the distributors give a service, not given by wholesalers, when they act as salesmen calling upon customers and urging the use of Merck products.

"Retardo" Answer To F.T.C.

The Federal Research Corp. and Shelley Braverman, New York, have filed an answer to the complaint of the Federal Trade Commission against their obesity remedy, "Retardo."

They declare that "Retardo" is claimed merely to be an aid in reducing, that it contains no dangerous drugs and that 100,000 boxes have been sold without injury to any consumer. They assert that any toxic effect of the boric acid contained in it is offset by the presence of a small amount of phenolphthalein and that the commission failed to take into account the formula as a whole.

They also maintain that no competition in interstate commerce exists inasmuch as there are no competitors with similar products.

Reducing Medicine Ruling

Municipal Judge Joseph L. Call of Los Angeles has dismissed charges of having sold drugs without a registered pharmacist's license brought against Edward H. Vokes and his wife, Hazel, of Los Angeles. His ruling was based on the opinion that a reducing medicine is a proprietary and therefore not subject to the state drug act.

Selling Drugs at N. J. Bars

D. Frederick Burnett, New Jersey Commissioner of Alcohol Beverage Control has ruled that the sale at licensed bars of a "bromide" or any other medicine not primarily a beverage is in violation of the regulations of the sale of liquors for consumption on the premises. He ruled that bars might keep on hand "baking soda and alkaline and other linings for the stomach's sake" for the convenience of customers but that their sale constituted the conduct of another "mercantile business" and is contrary to the law.

Synthetic Medicinal Figures

Synthetic medicinals were produced in increased quantity in 1937 according to the U. S. Tariff Commission. Sales of those of coal-tar origin amounted to $11,496,045 and of those not of coal-tar origin to $2,408,371. Sales of aspirin increased 25 per cent. to 5,143,672 pounds. Sulfanilamide, a very minor item in 1936, showed sales of 267,104 pounds. Mandelic acid and salts increased more than 200 per cent. to sales of 121,932 pounds. Among the outstanding changes were sharp decreases in the prices of the arsphenamines and the several medicinal dyes. Of the medicinals of the non-coal-tar group, amino acetic acid, or glycine, a relatively new medicinal, increased 90 per cent. in sales to 105,405 pounds. Further decline in the production and sales of certain barbituric acid derivatives occurred.

Coumarin sales increased about 36 per cent. to 186,325 pounds. Vanillin sales were up 26 per cent. to 370,930. Flavors and perfume materials from coal tar, as a group, increased 23 per cent. in sales value. A decreased output of 7 per cent. for isopropyl alcohol occurred.

International Drug Commission

An international commission to work for the establishment of standards for potent drugs has been appointed by the Health Organization of the League of Nations. The members of the commission, which will carry on the work started by the Brussels conference in 1902, are: Dr. C. H. Hampshire, London, chairman; Dr. E. Fullerton Cook, Philadelphia; Prof. H. Baggesgaard, Copenhagen; Prof. V. E. Zunz, Brussels; Prof. M. Tiffeneau, Paris; Prof. R. Eder, Zurich, and Prof. L. van Itallie, Leyden. A representative of the U.S.S.R will also be appointed.

WPA Perfume Project

The Board of Supervisors of Los Angeles County is considering a project for developing a fifty-acre tract for the cultivation of perfume and drug plants. It has been proposed to have the county furnish $25,000 and the WPA $125,000 for the project.

Financial

Dow Chemical Dividends

At a meeting of the board of directors of Dow Chemical Co., held June 30, dividends as follows were declared payable August 15 to stockholders of record July 30: on preferred stock or deposit receipts therefor 1¼ per cent.; on common stock without par value 75 cents per share.

McK. & R. Sales Off

McKesson & Robbins, Inc., reports for the four months ended April 30, net sales of $54,245,744, against $56,627,145 in the same period last year. April sales declined 7.55 per cent. to $12,986,126 from $14,047,042 in April 1937.

Reed Drug Dividend

Reed Drug Co., Milwaukee, has declared a special interim dividend of 10 cents a share on common stock payable July 15 to stockholders of record July 1. The regular quarterly dividend of 8¾ cents on Class A stock was also declared.

I. V. C. Earnings

International Vitamin Corp., New York, reports for the nine months ended March 31, net profit of $112,515, equivalent to 55 cents a share and comparing with a net income of $115,287, or 56 cents a share, for the same period last year.

Vick Earnings Down Sharply

Vick Chemical Co. and subsidiaries, Greensboro, N. C., report for the quarter ended March 31 net profit of $326,650, equal to 46 cents a share on 700,280 shares of capital stock. This compares with a net profit of $941,244, or $1.34 a share in the same quarter last year.

Obituaries

Jackson B. Ashley

Jackson B. Ashley, vice-president and assistant general manager of the Coffin-Redington Co., San Francisco, died at Fresno, Calif. June 23. He is survived by his widow, his parents and five brothers.

Maurice J. Curran

Maurice J. Curran, vice-president and a director of the Gillette Safety Razor Co., died at his home in Andover, Mass. He was eighty-three years old.

S. E. Conybeare

S. E. Conybeare, general manager of the industrial division of Armstrong Cork Co., Lancaster, Pa., died June 1 in that city at the age of fifty-three. Associated with Armstrong since 1917 he had been general manager of the industrial division since its establishment in 1932.

J. F. Ramsey

J. F. Ramsey, president of the Denver Mud Co., pharmaceutical manufacturer, Denver, died May 29 at the age of seventy-seven.

Charles J. Herold

Charles J. Herold, president of Polygraphic Co. of America, New York, died June 5 at the age of forty-nine.

INDUSTRY'S BOOKS

Any book reviewed in this section can be purchased direct from THE DRUG AND COSMETIC INDUSTRY at regular publisher's price.

Soap, Perfumery and Cosmetics Buyer's Guide and Cyclopedia 1938, Edited by F. V. Wells, size 8½" x 11½", 227 pp., Soap, Perfumery and Cosmetics Ltd., London, Price 10/6.

The 1938 edition of this well-known work, like its predecessors, is a compendium of technical and commercial information, annually compiled, revised and collated for the soap, perfumery, cosmetic and allied industries. It is edited by F. V. Wells, Fellow of the Chemical Society, and editor of "Soap, Perfumery and Cosmetics," in collaboration with members of the S.P.C. advisory editorial board and many of the leading manufacturers and supply houses in England. Various new features have been incorporated in the 1938 edition, notably the chapters on progress in the perfumery and cosmetic industry during 1936-37 and progress in the soap and allied industries during the past two years. Of particular interest to American manufacturers is the sections devoted to progress natural and synthetic perfume products as well as the report on the technical progress in cosmetics. Chemists in the industry will find "Useful Tables and Laboratory Information" particularly valuable as in this section has been incorporated much information of a nature that has often meant considerable research on the part of the individual chemist. The main sections of this work outlined below give but an approximate idea regarding its scope: Progress in the Perfumery and Cosmetic Industry, 1936-37; Progress in the Soap and Allied Industries, 1936-37; Useful Tables and Laboratory Information; Compounding Section; Handkerchief Perfumes; Soap and Allied Preparations; Perfumery and Cosmetic Preparations; For the Bookshelves; Market and Export; New Companies and Trade-marks; Buyer's Guide Section.

Chemical Calculations, by C. M. Jones, 95 pages Chemical Publishing Co., $1.25.

This small book, profusely sprinkled with practical problems in chemical calculation, is intended primarily for the student covering the subject for the first time. It is therefore elementary in nature and can be useful to those who wish to review methods that have become rusty through disuse.

Pharmaceutical Latin, by J. S. Dorfman, 146 pages, Lea & Febiger, Philadelphia, $2.00.

Latin is still considered the international language of physicians, veterinarians, dentists, pharmacists, and other scholars. Nevertheless, students in scientific schools have little or no elementary Latin in their High School work and there is a real need for a volume such as this. The value of the book is enhanced by the inclusion of Latin titles of significance mentioned in foreign publications, classified lists of pharmaceutical phrases, and comprehensive vocabularies.

The Chemistry of the Sterids, by Harry Sobotka, 634 pages, The Williams & Wilkins Company, Baltimore, $8.50.

The new formulation of the bile acids and sterols has stimulated many new chemical investigations in the past few years. As a result, the antirachitic vitamins, the sex hormones, the cardiac glycosides were recognized as phenanthrene derivatives. Thus the known bile acids and sterol derivatives increased from several hundred to several thousand within a comparatively brief time.

This rapid increase prompted the author to develop this comprehensive catalog of the sterids, giving their physical and physiological properties and discussing the analytical methods used in physiological experimentation on bile and sterols.

For the experimental worker or clinician who is interested in the most comprehensive catalog of the bile acids and related compounds, this is the best possible available reference work.

Qualitative Chemical Analysis, by Louis J. Curtman, Revised Edition, 514 pages, The Macmillan Company, New York, $3.75.

The changes in this edition include revision of the theoretical part to include recent advances and modern viewpoints and revision of the laboratory work to conform with improved procedures. Tested semi-micro procedures have been supplied to be used as alternative methods or special procedures where conditions warranted their use. The plan of the book has not been changed. It is adapted to those who wish to take a brief course in the subject and to the requirements of a thorough study.

Guinea Pigs and Bugbears, by G. L. Eskew, 269 pages, Research Press, St. Louis, $1.50.

This book is intended to be "the first real answer to sensational, muckraking literature like the book '100,-000,000 Guinea Pigs' and others of the same ilk; Consumers' Research and Consumers Union bulletins, and similar publications."

This work falls short of its goal, and even the flowery language in which it is written cannot hide its shortcomings. McDonough's "Truth About Cosmetics," written by a recognized authority, is the type of answer the industry needs to "muckraking," and only sober, well-considered argument (for which ample material is available) can properly serve industries under attack. As is often the case, cosmetics, drugs, foods may suffer more from intemperate defenses of friends than from attacks of their avowed enemies.

Insulin by Hill and Howitt, 219 pp. Illus., Chemical Publishing Co. of N. Y., Inc., Cloth $5.00.

This is a book on the production, purification and physiological action of insulin. The object in writing this work was to collect and sift the vast accumulation of literature relating to insulin compiled since its discovery. This work is therefore more in the nature of a set of notes on the problems confronting students of this subject. It should be useful to those working directly on insulin, whether its commercial, clinical or physiological aspects, or indirectly insofar as they are investigating problems of Carbohydrate-Metabolism.

The Cost Principle In Minimum Price Regulation by H. F. Taggart, paper cover, 332 pp., University of Michigan, Ann Arbor.

Michigan Business Studies, Volume VIII, No. 3, entitled The Cost Principle in Minimum Price Regulation, is now ready for distribution. There has been an increasing demand for the passage of laws forbidding sales below cost. There are many difficulties in enforcing such legislation but this publication for the first time points out the difficulties of defining cost for such a purpose. While primarily an analysis of a current issue of far-reaching implications, the volume contains illuminating discussions of a number of important cost accounting problems, especially those involved in the formulation of uniform cost systems for trades and industries.

A Concise Pharmacology, by F. G. Hobart and G. Melton, 171 pp., cloth, pocket size, Leonard Hill Ltd., London, $2.00.

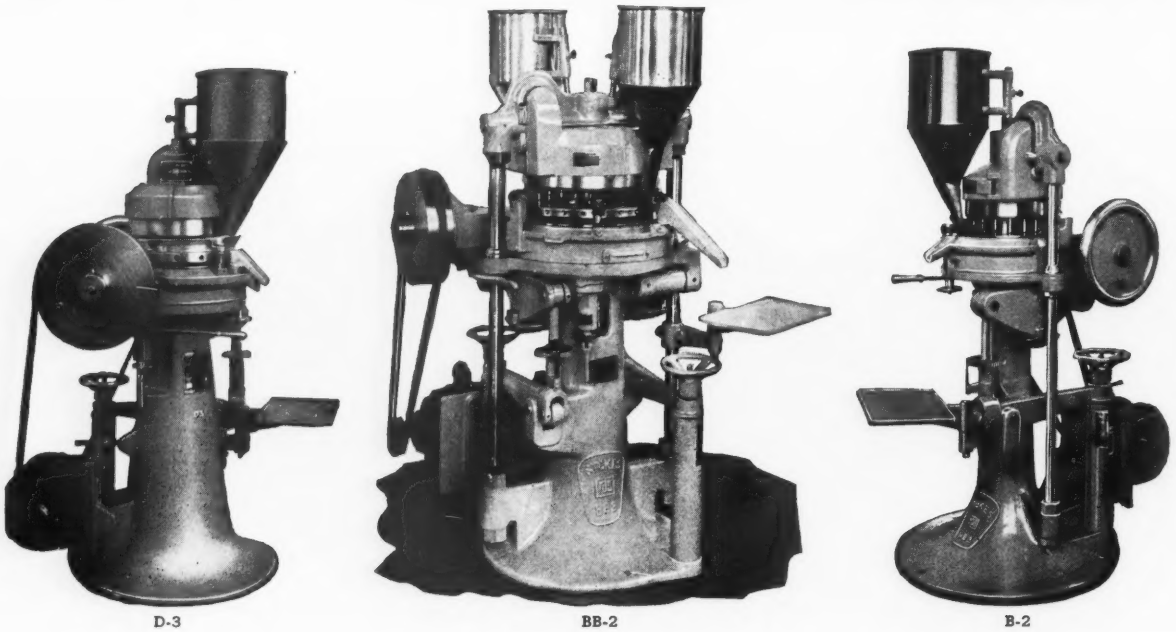
A Concise Pharmacology is an original and unique publication on the subject, which it treats in a practical and eminently readable fashion. It is directed to medical men, pharmacists, nurses and manufacturing chemists. The comprehensive grouping of the drugs, can readily be seen by the list of headings given below, the list is in outline only, and gives only a conception of the detail compressed into the various monographs. The Alkalis, The Acids and their Salts, The General Action of Salts, Aperients, Astringents, The Autonomic Nervous System, Antiseptics and Disinfectants, Urinary Antiseptics, Mercurial Preparations, Antipyretics, Diaphoretics, Metals and Their Salts, Anaesthetics, Injectable Anaesthetics, Hypnotics and Depressants, Diuretics, Expectorants and Emetics, Respiratory Stimulants, Drugs Influencing Digestion and Metabolism, Oils, Fats and Waxes, Starches, Sugars, Gums, The Vitamins, Etc. Supplementary sections include a simplified guide to incompatibility, a table of individual reaction to drugs, etc.

World Chemical Developments in 1937, Dept. of Commerce, Bureau of Foreign and Domestic Commerce, Washington, D. C., paper cover, 221 pp. 25c.

This is the fifth edition of World Chemical Developments and reviews the principal developments in the important chemical producing countries, as well as many of the major and some of the minor chemical consuming markets. Several countries—Bulgaria, Latvia, Lithuania, Rumania, Dominican Republic, Honduras, El Salvador, Bolivia and Ceylon—which were not treated previously are included in the 1937 report. This bulletin has been prepared from reports submitted by the foreign offices of the Department of Commerce and of the Department of State, and from official data and statistics supplied to the Department by the various foreign countries.

Materia Medica Drug Administration and Prescription Writing, by Oscar W. Bethea, Fifth Revised Edition, 577 pp., F. A. Davis Co., Phila. Cloth $5.00.

This is the Fifth Revised Edition of this well-known work and was written primarily to bring the text up to date by conforming to the U.S.P. XI and the N.F. VI. A brief historical sketch of most of the important drugs has been added, the text with regard to dispensing has been brought up to date and greatly enlarged and in this edition much more space has been given to the employment of drugs as they are used in hospital and dispensary practice. Many old prescriptions have been omitted and a large number have been added. The section on drugs has been practically rewritten. The alphabetical arrangement and complete information under each item makes it an easy reference work.



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Improved TABLET MACHINES

IN WHICH ARE RETAINED ALL THE FUNDAMENTALS OF STOKES ORIGINAL DESIGN AND CONSTRUCTION

It is the fixed policy of Stokes engineering to stick to the fundamentals of simplified design, rugged construction and few and simple controls . . . fundamentals which have won world-wide acceptance for Stokes Tablet Machines, which for more than 40 years have made these machines standard equipment in most pharmaceutical laboratories.

Stokes Machines have been continuously improved, made more practical, more productive. Their years of usefulness have been increased and maintenance costs reduced by the added strength and ruggedness contributed by modern metals and alloys. Their simplicity of control, adjustment and change-over have been carried to the point where Stokes Tablet Machines are successfully set up and operated in far-away places by men who never before have seen machines of this type.

Stokes Tablet Machines are built in a wide range of sizes and types, Rotary and Single Punch, to meet every requirement of pharmaceutical tablet manufacture. Shown above are three popular Rotary Models.

The B-2 Rotary Tablet Machine is standard equipment in most plants, making all tablets $\frac{1}{4}$" to $\frac{3}{8}$" diameter, in quantities up to 500 per minute. A practical machine also for small-lot production . . . by simply using a partial set of punches and dies.

The BB-2 Rotary is a high-production machine . . . 1,000 to 1,500 tablets per minute without the use of multiple punches and dies. Tablets are accurate in weight and hardness, material for each being ***individually*** measured and then compressed.

The D-3 Rotary is a heavy-duty machine for larger tablets and lozenges. It is particularly suitable for granulating by the slugging method, yet can be quickly changed over for regular work. Output 300-350 per minute.

Common to all these machines are features such as Adjustable Automatic Excess Pressure Release, completely housed drive and punches, easy accessibility, semi-steel construction, etc. Write for catalog 710 with complete descriptions.

F. J. STOKES MACHINE CO.

5932 Tabor Road Olney P.O. Philadelphia, Pa.

Representatives in New York, Chicago, Cincinnati, St. Louis
Pacific Coast Representative . . L. H. Butcher Company, Inc.

F.J.Stokes **TABLET MACHINES PHARMACEUTICAL EQUIPMENT** FJS Est. 1895

PRODUCTION FORUM

BY Francis Chilson
PRODUCTION ENGINEER

EMULSIFYING WITH SOUND WAVES

A little over a year ago we described in this department a small sonic mixer which Dr. Irvine W. Grote, consulting chemist of Chattanooga, Tenn., had rigged up in his laboratory and we suggested that the principle utilized in this simple laboratory device might be utilized in the development of industrial equipment. The unit referred to consisted of a high frequency vibrating ring into which a beaker was set. Since that time we have run across an increasing number of applications of high frequency sound waves to industrial processes. Leslie A. Chambers of the Johnson Foundation For Medical Physics has shown that at a frequency of 300,000 cycles per second an emulsion of soya bean oil in water will have maximum particles sizes between 50 and 100 millimicra which is pretty damn small and which indicates the possibility of preparing intravenous emulsions on a commercial scale. It has long been known of course that high frequency sound waves will kill bacteria, a feature which suggests a possible application in the manufacture of biological products. Chambers states that with lower frequencies the particle size of emulsions increases, a phenomenon which indicates that by control of frequencies an effect opposite to dispersion or emulsification can be secured, namely, aggregation. In experimental work on certain mixtures this has clearly been demonstrated.

Grote was using the sonic ring for hastening solution rates. The principle has also been applied in saponification, esterification, hydrolysis and extraction. The application of "sonic cavitation," as it is called in scientific circles, in the acceleration of chemical reactions has produced some remarkable results. Sonic oscillators have already replaced homogenizers in certain dairy and ice cream plants. The operating cost is lower than that of a homogenizer and, what appeals to us most strongly, is the fact sonic equipment has no moving parts to increase the difficulties of cleaning. Imagine having a mixer with no baffles, agitator or projections of any kind inside the tank! Enough industrial work has been done to indicate that sonic oscillators will find wide application in our trade. If you are interested in any special application drop us a line and we shall be very glad to put you into touch with the firm which has built the first of the commercial units. In the meantime we are following developments closely in industries other than our own and will report further.

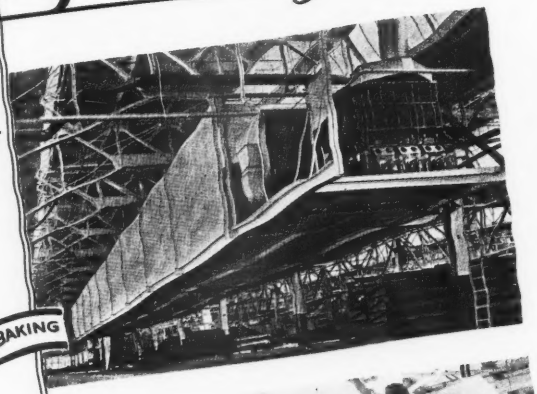
STERIL-LAMPS

Killing bacteria by radiation is a fairly recent commercial practice. The Rentschler-James process has been applied widely in the food industries. The lamps and mountings are made by The Westinghouse Mfg. Co., Bloomfield, N. J. and are comparatively inexpensive. Over in Brooklyn a soft drink manufacturer has a Steril-Lamp installed in a large syrup tank to prevent rancidity. Many firms in our trade have had trouble in storing low concentration syrups, and we all know the difficulties of storing distilled water for any length of time. The lamps are not expensive to operate. A 30 inch lamp consumes only 14 watts and is sufficient for 30 square feet in a confined area. One advantage of the use of sterlizing lamps (manufacturers of biologicals and glandular products please note) is that contamination can be avoided in processes requiring refrigeration even at relatively high temperatures. In the meat packing industry coolers which formerly had to be operated below freezing are now operated at 45° F. The saving in refrigeration tonnage is obvious.

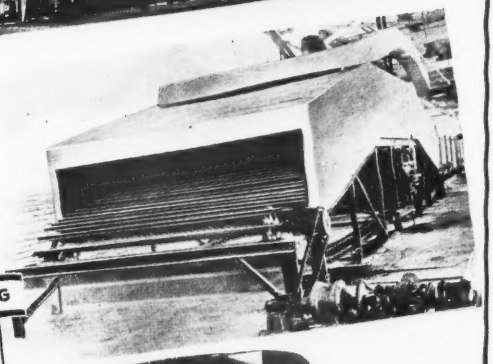
ROSS
RE
SYSTEMS

Complete Line of Pure Air Systems *from*

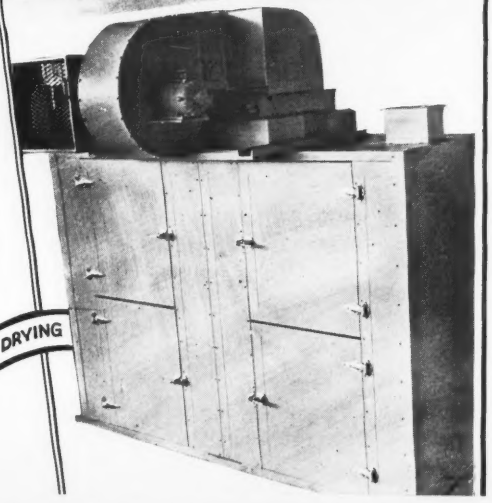
1000° FAHRENHEIT TO 0° FAHRENHEIT



HIGH TEMPERATURE BAKING



MEDIUM TEMPERATURE DRYING



LOW TEMPERATURE DRYING

Air at High and Low Temperatures and Humidities used for any Industrial Process is efficiently provided and utilized in various Ross Systems. They are successfully operating in many processes involving high temperature baking, drying, air conditioning, refrigeration and chilling as well as dehumidification of air.

If you have a job to be done by AIR, let Ross design and build a system for you.

J. O. ROSS ENGINEERING CORPORATION

Main Office — 350 MADISON AVE., NEW YORK, N. Y.

201 North Wells St. CHICAGO — 12953 Greeley Ave. DETROIT — 2860 N. W. Front Ave. PORTLAND, ORE.

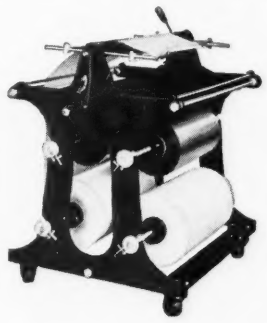
IN CANADA — ROSS ENGINEERING OF CANADA, LTD. — DOMINION SQUARE BUILDING, MONTREAL

SEMI AUTOMATIC WRAPPER

Scandia Manufacturing Co., North Arlington, N. J. has developed a semi automatic wrapping machine as a companion piece to its well-known automatic unit. The essential difference between this unit and other types of semi automatic wrapping equipment is that this machine is equipped with an automatic paper feed and cut off. In consequence of this two operators can complete between forty and fifty packages per minute. One girl is required to feed packages to the machine. The package is taken into the unit, paper is fed from a roll, cut off and wrapped around the package. As the packages travel forward the ends are heat sealed. At the discharge end the second operator is required to withdraw the package from the machine with a sliding motion which makes and heat seals the final fold. We haven't seen this machine in operation yet, but from the data supplied us we cannot see why packages cannot be fed directly into the wrapper without requiring a girl at the intake end. But we shall know more about this shortly.

SHEET CUTTER

A very practical sheet cutter has been developed by U. S. Slicing Machine Co., LaPorte, Indiana and is being offered in two sizes. The small unit has a mount-



ing for only one roll of paper. It will take rolls of any kind of paper up to 24" and will make cut-offs up to 36" in length. The larger unit which sells for less than $100. has mountings for four different roll widths. The purpose of this feature is to facilitate change over from one size to another.

PASTE FILLER

Fraziers & Son, 7 Bremond St., Belleville, N. J., has developed a machine for filling pastes, which could be used for filling collapsible tubes, for jars of ointments, pastes and creams. Originally the machine was developed to feed sandwich spread on to crackers. It is a very simple unit and is equipped with a conical hopper, feed screw and adjustable quantity filling mandrel. Look it over if you have any low volume cold filling to do.

ERROR

Some time ago we described a hand labeling machine made by Mandel Products Co. of Newark, N. J. A number of people wrote this outfit for additional details and then wrote us that the firm could not be located at the address given. We made an investigation and found that they were not located at the address given in their circular and they could not be located through the post office. Apparently the outfit folded up before it got started.

TOUGH PAPER

H. P. Smith Paper Co., 1130 W. 37th St., Chicago have a type of wrapping paper which is tough and pliable when wet and which canbe boiled without breaking. It occurred to us that such a paper might be useful for covering label boards.

HANDLING OILS AND FATS

In the food industry we saw a handy devise for handling coconut oil which might prove useful to you in handling mineral oil, petrolatum, fats, etc. The drums or barrels were trucked up to the melting kettle. A portable pump, mounted on a high truck was rolled up and its intake nozzle stuck into the drum or barrel. The intake nozzle was fitted with thermostatically controlled heating elements. The pump was equipped with a by-pass so that the melted fat could be diverted back into the drum to speed up softening of the whole lot. For handling small lots this device seemed useful. By mounting the pump on the truck or skid which is used for handling the drums, the apparatus could be made still more useful.

MACHINE COST

What is a fair price for a machine, especially an automatic packaging machine? Having noted a price increase in certain equipment we had an interesting discussion with an equipment builder on this subject. His position was that all equipment is priced too low; that the machine manufacturers get only a negligible fraction of what machinery saves; that the machinery manufacturer invests enormous sums in the development of equipment for the industries he serves; that the equipment builder does not always get a fair break from the equipment user.

We agreed readily enough that the price of *some* equipment is too low, but we were unable to see that the equipment user is responsible for such a condition. It is due to chiseling tactics among equipment builders themselves. We pointed out to our friend that there is an upper limit to equipment prices beyond which there is an inducement for the large equipment user to build his own. This brought up the question of patents, which always is a sore point. Equipment builders seem to feel that all equipment ideas and improvements originate with them and are not inclined to give any of the credit to equipment users who continually pour out a stream of suggestions, both practical and impractical. They also forget that many standard machines originally were invented in the industries using them. However, the question of credit is neither here nor there.

A Woman Walks into a Drugstore

. . . *and what happens?*

LET'S say she wants a hand lotion, but has no brand preference. The druggist offers her a choice of two different brands. She looks each of them over, sets one down, holds one up, says: "I'll take this."

Now, why did she choose one and not the other?

A woman doesn't try out a hand lotion in the drugstore. She doesn't sniff it or touch it. Sometimes she doesn't even see the product itself. ***But she sees the package.***

One package has "eye appeal," another hasn't. One package, by its smart modern appearance, suggests the quality of the product within. Another doesn't. One package is tight-sealed, sanitary, tamper-proof. Another isn't. These little differences perceptibly influence sales.

In no other industry is quality packaging more important than in the drug and cosmetic industry. When health or beauty is at stake, people are particular.

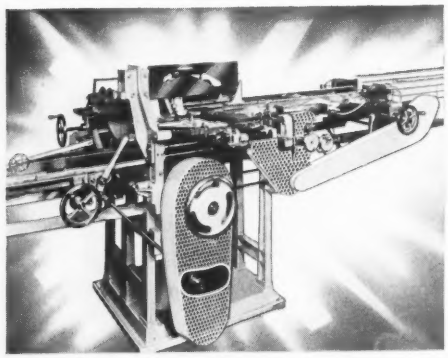
You must be particular, too—in selecting your wrapping machines for uniformly perfect production, as well as efficiency and economy.

Write for literature

NEW

ADJUSTABLE WRAPPING MACHINE

Ideal for Drug and Cosmetic Manufacturers



MODEL FA-Q

The FA-Q Machine is perfectly suited to your needs, because it handles an extremely wide range of sizes. Can be adjusted for different sizes in all three package dimensions *in only 10 minutes*—much more quickly than former machines. Uses any type of wrapping material . . . allows wide leeway in package design and appearance. Ensures the right package for your product from both the *sales* and *economy* standpoints.

PACKAGE MACHINERY COMPANY - - Springfield, Mass.

NEW YORK CHICAGO CLEVELAND LOS ANGELES

Mexico, D. F., Apartado 2303 Buenos Aires, Argentina: David H. Orton, Maipu 231

Peterborough, England: Baker Perkins, Ltd.

Melbourne, Australia: Baker Perkins, Pty., Ltd.

PACKAGE MACHINERY COMPANY

Over a Quarter Billion Packages per day are wrapped on our Machines

The equipment builder and the user thereof should help each other since one cannot get along without the other.

As to whether or not an equipment builder should share in the savings made possible by automatic equipment raises an interesting question. Without the equipment the savings cannot be made. By the same token, without raw materials the product could not be made. Wherefor, is the equipment builder more entitled to a share in the profit from successful products than a supplier of the raw materials from which those products were made? We don't think so. It must not be forgotten that a vast amount of money, brains and time goes into the sales and distribution of successful products before there is any need to haggle about the best equipment to be used in producing them. It is the sale of the product that accounts for profits;it's a damn poor product that must depend for its profit upon production economies alone. It seems to us that equipment prices will go down rather than up. Increased engineering skill has made it possible to design equipment with fewer parts and lighter construction and hence has made possible lower production cost. Lower priced equipment means a higher obsolescence rate because manufacturers will be less hesitant about discarding equipment that still can be operated. We don't need Rolls-Royces to do Ford jobs.

NEW SANITARY PUMP

The Viking Pump Co. has just introduced a very small and compact sanitary pump which should be useful in your liquid room. The pump can be taken apart for cleaning quicker than you can bat an eye. It is equipped with a variable speed drive, giving a speed range between 200 and 500 rpm and a capacity between 17 and 40 gpm.

LOCKING PAILS

Wilson-Bennett Co., 6532 S. Menard Ave., Chicago, Ill. have a line of locking pails which have quick opening covers. You will find them useful for storing pill mass, drug extracts, pills and tablets and similar materials.

STAINLESS STEEL

We've located a source of supply for stainless steel equipment which we'll be glad to tell you about if you drop us a line. This outfit fabricates enormous tonnages of stainless steel and in consequence of its carload purchases can supply fabricated equipment at surprisingly low cost. For instance we obtained quotations on a stainless steel sink. One outfit wanted $110.00. The concern to which we refer delivered the unit at $48.

SEND FOR A COPY

Karl Kiefer Co., Cincinnati, O., has issued a new bulletin "Keeping Ahead With Kiefer." While the bulletin describes the extensive line of packaging and filling equipment made by the company, the feature which interests us most is a picture of Kiefer's New York Agent, Al Sterling. We don't know how much Al bribed the photographer to turn out a picture like that, but it must have been considerable because we've been a friend of Al's for fifteen years and we know he was never that good looking. The picture was so distinguished that we had to look at it several times to make sure it really was Al. It reminded us of the time Joe E. Brown saw a six foot enlargement of a photograph of his face. He jumped up quickly and yelled, "It ain't so!"

VACUUM PRACTICE

A hand book on vacuum practice and a catalog of High Vacuum Pumps, has just been issued by the F. J. Stokes Machine Company. Its primary purpose, of course, is to do a selling job for Stokes High Vacuum Pumps. It catalogs five sizes of pumps from 10 cu. ft. to 225 cu. ft. capacity . . . contains pump information of real value to anyone working with vacuum in its higher ranges, from around 28" up to within a few microns of absolute.

The hand book section of this catalog (there are many pages of it) is filled with data, charts, graphs and tables that are sure to find a permanent place in reference files and engineers' libraries wherever vacuum, especially high vacuum, is used. Much of this data is original, never before published, compiled by the engineering staff of the Stokes Co.

All of it is applicable in every-day practice, technical data translated into plain language that everyone can understand.

The book is a comprehensive presentation of the story of higher vacuum, its applications, advantages and economies in industry. Vacuum practice applicable in the manufacture of pharmaceutical specialties, glandular extracts, etc., is described. Operations such as extraction and solvent recovery, the selection and operation of pumps and auxiliaries, maintenance of equipment and systems and other shop problems are discussed. The book is a compilation of authoritative data and information on vacuum practice that brings the reader up-to-date on this subject.

If you are interested in high vacuum methods, write for a copy of this new catalog. There's no charge. Address the F. J. STOKES MACHINE CO., Olney P. O., Philadelphia, Penna.

PORTABLE MIXERS

Strange as it may seem, the question is still frequently raised as to whether a portable electric mixer can be safely clamped on a glass lined tank or stoneware container. Accordingly Mixing Equipment Company of Rochester, N. Y., which has thousands of mixers of this type in use, gives the following advice:

"The metal clamp should not come in direct contact with the tank. A block of wood or a crutch tip should be used on the clamp screw, while the inside of the tank should be protected by a piece of rubber or leather, cemented to the clamp or folded over the edge of the

From a recent financial service:

"The keen competition and narrow profit margins which characterize most of our industries have made it increasingly hazardous to continue production with out-moded equipment."

HERE'S WHAT McKESSON & ROBBINS DID ABOUT IT!

— Switched to (4) *Portable* Redington Machines Which Now Carton Over (40) Bottled Products from Iodine to Mineral Oil Ranging in Size from (9/16) Ounce to (8) Ounces

McKesson & Robbins had a complicated problem, indeed. To handle tincture of iodine and milk of magnesia on the same line is inadvisable. To have cartoning machines adjustable for the wide range of bottle sizes required for each production line was out of the question, too. So this fine pharmaceutical house had to be content with slow, out-moded machines and hand cartoning (on some products) . . . until they solved their problem with Redingtons.

Today *four portable* Redington Continuous Loading Cartoning Machines are cartoning their entire output. All four are adjustable to some extent. The total adjustability of all machines covers the entire range from 9/16 oz. to 8 oz. Bottling lines have been arranged by type of product . . . each line handling practically every size. *Because each cartoner is portable, the proper unit for the size bottle then being handled can be moved into the production line.*

As a result, cartoning costs are decidedly lower . . . profit margins wider for McKesson & Robbins.

Just a few of the dozens of products of McKesson & Robbins cartoned on a battery of four Redington Continuous Loading Cartoning Machines.

F. B. REDINGTON CO. (Est. 1897) 108 So. Sangamon Street CHICAGO, ILL.

REDINGTON *Packaging Machines*

for CARTONING • CELLOPHANE WRAPPING • CARTON SEALING

tank. When used in this way, the tank lining cannot be injured. Metal brackets attachable to one of the tank legs can be bought or made, if this method does not appeal to the user.

Small crocks of 30 gallons and less should not be expected to carry a mixer. A separate support should be provided and the crocks moved to the mixer. Larger crocks, especially if made of chemical stoneware, will support the mixer without danger, the method of attachment being the same as for glass lined tanks."

LABOR RELATIONS

A good deal is being said and written about labor relations these days. It's a tough problem and it rests upon four fundamentals which we have never been able to guarantee, namely, security, good wages, fair treatment, pleasant working conditions. In twenty years of experience it has been my observation that these four factors are important in the order given. We have been able more or less to provide the last three, but we have never been able to guarantee security. Even in prosperous times the worker suffers from the harrowing fear that he or she might lose a job for any reason or for no reason as it often happens. In times of worry at home: sickness, death or idleness of some other contributing member of the family, the uppermost thought is, "What would happen if I lost my job now?" It's a hell of a feeling. I know. I've had it plenty of times. It does seem to me that this industry can provide security for its workers—someday. But I don't see how it can be done until our methods are on a par with other industries. When a business is being run upon a sane, efficient basis, the margin between actual production cost and net selling price is great enough so that it can give assurance of permanent security regardless of outside conditions. Up to now whenever a choice had to be made between the interests of stockholders and those of employees, the employees suffered first. I know that I am open to the charge of hypocrisy because my own professional work inevitably results in the loss of jobs for many people. Of this aspect of my work I am not proud, and I have always seen to it that the dead wood, the loafers and the trouble makers go first. My consolation has been that industry must be made more efficient in order to provide security for the competent workers who make its continued success possible. It seems to us more rational to employ a comparatively few workers per million of sales and to guarantee them good wages and secure positions, than it is to operate intermittently with security for none.

K.A.T.

In order to produce clean steam and to avoid boiler scale, it is the customary practice to treat boiler feed water with some combination of chemical compounds. A physical method of treating boiler feed water has been developed and it involves the use of colloidal agents, which coat the impurities in the water so that such impurities can be removed as sediment. One such colloidal product is called K.A.T., made by the American K.A.T. Corp., 122 E. 42nd St., New York City. It is claimed that this product contains no oils, will not break down under pressure, will not carry over with the steam. It is said to be perfectly innocuous and it was developed for use in the food, dairy and brewery industries where live steam must be brought into direct contact with the product. It is further claimed that K.A.T. will protect the boiler against corrosion.

FOREMEN TRAINING

Very few large organizations in this trade make any effort to provide organized training for foremen and supervisory personnel. Great pains are taken in the training of salespeople, but the people who are largely responsible for the service of sales and who also control the cost of goods sold, are allowed to grow up like Topsy. The foreman usually is the man with most experience in his department; he may also be a driver, a tyrant and woefully ignorant of any other method of doing a job beside the one to which he has been accustomed. In a very large organization where progress toward the top is rapid, it is possible to break in pharmacists, chemists, and engineers of one kind or another as foremen. But if a young, college trained man is worth a hoot he will not remain contented as a foreman unless openings farther up the line occur with reasonable frequency. Few organizations grow fast enough to provide such rapid progress. Accordingly the best type of foreman is the intelligent, energetic chap whose educational opportunities have been limited. You can provide training for chaps like these and they do not expect to be made president of the outfit four weeks after they are appointed foremen. Unfortunately there is no good foreman's training course available. To be worth anything such a course should combine practical pharmacy, practical chemistry, practical mechanics, elementary motion study, practical psychology, employee training and methods of factory organization and production control. In the course of time a foreman in the drug trade gets all this, but he learns it in a very biased and disorganized manner. The result is that as the foremen get older they become more and more warped by their own limited experience and observation. If the colleges were on the job a practical training course would be available by correspondence and arrangements could be made in each plant for group leadership so that the boys could study together and apply what they learn to their own problems. Years ago when we were connected with a large candy manufacturer we attempted to organize a foremen's training course, but most of the boys soon lost interest because the only material we could get was predicated on the practices of alien industries and they just could not grasp and apply to their own problems the underlying principles. We then and there resolved that if the opportunity ever came again to organize such a course, it would have to be based entirely on the materials and practices of a given industry.

"LIGHTNIN" Geared Drive Portable Mixers running at 400 R.P.M., mix thoroughly surprising quantities of thick, viscous liquids such as hot process creams, lotions, etc. The patented *"LIGHTNIN"* double mixing action produces a slow rotation plus a rapid bottom-to-top turnover. "Dead spots" are eliminated. Power consumption is less. The *"LIGHTNIN"* line includes Top Entering Units for pressure or vacuum work and Side Entering Units for tanks up to 1,000,000 gallons in size. Our engineering staff is at your service without obligation.

GREASE FREE MIXING

"LIGHTNIN" Sealed Outboard Bearing guarantees that no oil or grease from this source can leak down into your mix.

MIXING EQUIPMENT CO., INC.

1042 Garson Ave. Rochester, N. Y.

MANUFACTURERS OF LIGHTNIN PROPELLER TYPE MIXERS

Capetown, Calcutta, Tsientsin or Hoboken..

Far or near we're ready to serve you with CONSOLIDATED'S Guaranteed Good Rebuilt Equipment.

SELECTED SPECIALS

2—Solid nickel, jacketed, agitated Vacuum Pans or Stills: 1-50 gal.; 1-100 gal., unused.
1—Pneumatic Scale Packaging Unit, carton feeder, top and bottom sealer, 2-stage weigher, Wax liner unit.
1—Pneumatic Scale Automatic Screw Capper; 4 Kramer, semi-automatic.
2—Samco Jr. 6 spout Vacuum straight line Fillers.
5—Gravity and Vacuum Bottle Fillers, 2 to 6 spout.
1—National MG Powder Filler and Weigher.
2—Ferguson Carton Wax Wrappers.
2—World Rotary Automatic Labelers.
1—World Automatic straight line Duplex Labeler.
8—World, Ermond and National semi-auto, motor driven Labelers.
10—Tablet Machines: 1—Stokes Rotary BB 7-16"; 1—Stokes Rotary B, 5/16"; 3—Colton 2B, 1/4"; 1—Mulford, 2"; 2—Colton No. 2 Rotary, 5/8"; 1—Stokes Rotary D, 1"; 1—Stokes Eureka hand, 1/2".
Dry Powder Sifters and Mixers, lab. size to 4000 lb. capacity.
2—Karl Kiefer Visco Piston type Jar Fillers.
1—Urie Universal Tube or Jar Filler, motor driven.
5—Pony Mixers, Day and Ross makes, 8, 15, and 40 gal.
2—200 gal. Glass Lined Jacketed Kettles; 2-250 gal. Agitated; 4—350 gal. jacketed.
MISCELLANEOUS—Large selection of: Glass Lined Storage tanks, Drug Mills, Pulverizers, Sifters, Colloid Mills, Filter Presses, Coating Pans, Pill Mass Mixers, Tanks, Agitators, Pumps, Boilers, Kettles, Ointment Mills, Grinders, Screens, Filters, Stills, etc. SEND FOR COMPLETE BULLETIN.

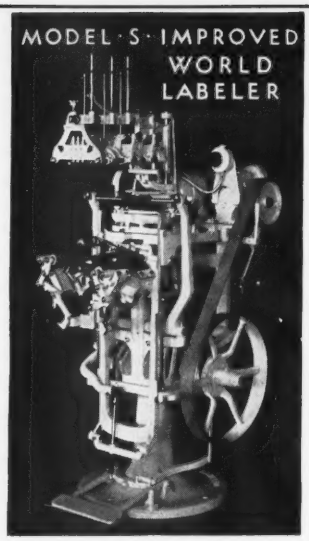
What have you for sale? Send us a list.

We Buy and Sell from a Single Item to a Complete Plant

Consolidated Products Company, Inc.

20-21 Park Row New York, N. Y.

Warehouse and Shops: 331 Doremus Avenue, Newark, N. J.



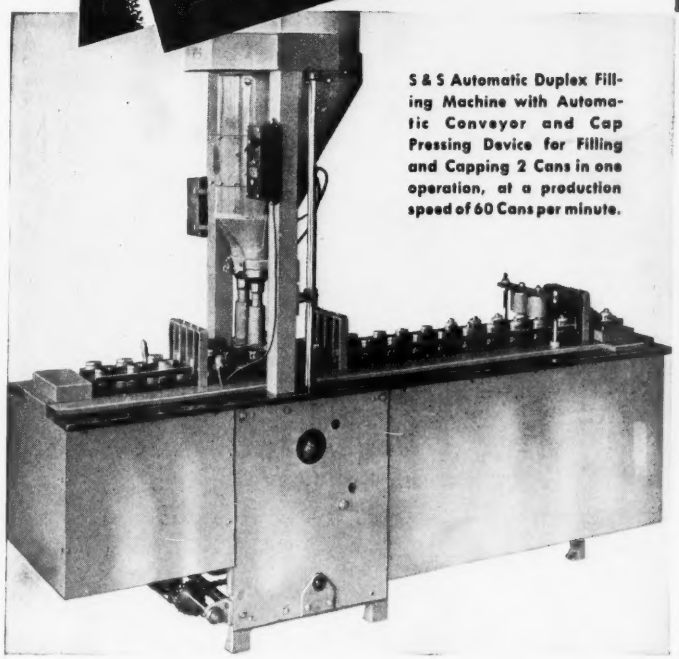
The most flexible labeling machine. Easily equipped for labeling any size bottle or jar. Many exclusive mechanical features, developed by manufacturing experience of more than 35 years.

Economic Machinery Company

WORCESTER, MASS.

Makers of complete line of automatic and semi-automatic labelers.

Another Leading Company Chooses... S&S FILLING EQUIPMENT



S & S Automatic Duplex Filling Machine with Automatic Conveyor and Cap Pressing Device for Filling and Capping 2 Cans in one operation, at a production speed of 60 Cans per minute.

FILLING MACHINES for powders, granular products, pastes . . . CARTON Filling and sealing machines . . . ENVELOPE Filling and sealing machines . . . TIGHT-WRAPPING Machines.

★

When E. R. Squibb & Sons, Manufacturing Chemists to the Medical Profession since 1858, decided to package Squibb Tooth Powder they chose the Stokes & Smith Automatic Duplex Filling Machine.

This machine fills two cans of the same size, or cans of two different sizes, at the same time. It also presses the caps in place and the complete operation is performed at a production speed of sixty packages per minute. That such a distinguished firm as E. R. Squibb & Sons should choose S & S Filling Equipment is considered high tribute. Perhaps it may bear witness to the fact that there is an S & S Filling Machine suited to your requirements, whether your product be a granular, powder or paste.

SPEEDS TO SUIT YOUR NEEDS—15-30-60-120 PER MINUTE—WRITE FOR ILLUSTRATED FOLDER

STOKES & SMITH Co

PACKAGING MACHINERY — PAPER BOX MACHINERY

4912 Summerdale Ave., Philadelphia, U. S. A.

Here's what you'll like about the new

...''HAGERTY HANDY FILLER''

- Durable
- Moderately priced
- Eliminates spilling
- Simple to operate
- Convenient sizes
- Light construction

The most practical hand filler for creams, lotions and liquids.

Write for illustrated folder and prices

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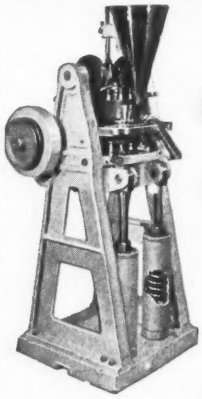

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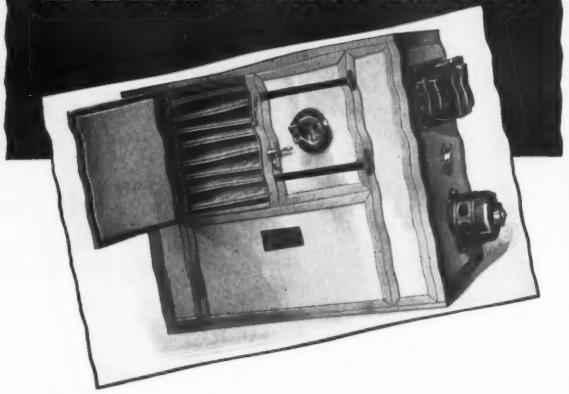

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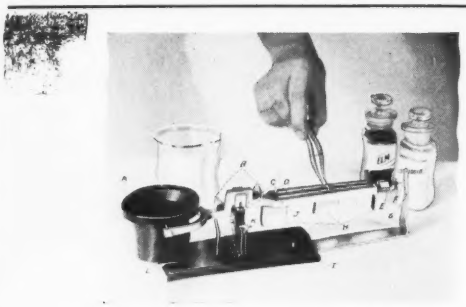

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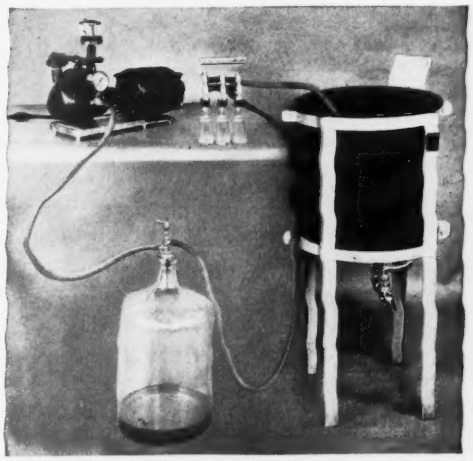

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VIOLET

VIOLET is again becoming a very popular scent, especially as a Spring perfume and toilet water. There are several new attractive perfume lines which have featured Violet toilet water, perfume and bath powder. Many department stores at the present time have displays of violet perfumes, toilet waters, tales, etc. and everywhere it seems that Violet is regaining its former popularity, and will join the ranks of carnation, lilac, and gardenia as one of the popular flower odors for spring and summer wear.

Violet scent has been known since the days of Ovid and Pliny and Mohammed once remarked that his superiority over other men could be compared to that of the Violet perfume over all other scents.

The absolute flower oil is very expensive, being extracted by maceration or by the use of volatile solvents and yielding such a small amount of essential oil that the flower oil is more a curiosity than a standard product. For this reason it is necessary for the perfumes to resort to the use of synthetic aromatic chemicals and essential oils in order to formulate the true odor of the Violet.

One of the most important synthetic ingredients available are the Ionones which were perfected by Tiemman and Kruger many years ago and due to the new methods of manufacture, several types have been made which are indispensable in blending this scent, for example; Alpha Ionone is used where a very light and flowery character is desired while in perfecting a wood Violet type, it is necessary to incorporate a fine grade of Beta Ionone. There are also other Ionones such as Methyl Ionone, which are also valuable and which can be used at the discretion of the perfumer. The real value, however, of the Ionones is only obtained when used in cosmetics with other materials. The absolute flower oils required are also important, the most valuable one being Cassie which blends especially well with Ionone and which is the nearest flower oil we have to the true Violet aroma. Jasmin is also useful in small quantities as is a fine Ylang Ylang. The writer would say that Orris Concrete is next in importance, this product being obtained from the roots of the Florentine Iris and should be of the finest quality in order to get the best results. Other aromatic chemicals of especial value are Methyl Heptin Carbonate, Anisic Aldehyde, Anisyl Acetate, Rhodinol, Geraniol, Guaiac Wood Oil, Methyl Octine Carbonate, Heliotropine, and Benzyl Acetate. Of course, some of these ingredients must not be used where discoloration or irritation of the

"I wonder where he got that odor."

PREPARE for IMPROVEMENT

THAT is the advice offered editorially in one of today's leading business journals. In substantiation, it cites the report of a most reliable and outstanding source of information on business and economic trends. Briefly it enumerates those factors which point to impending improvement,—progress toward inventory, price and cost readjustments; increasing backlogs of deferred demands; active work on new auto models; abundant crops; and last but not least, the renewed stimulus of Government spending.

Whether or not we all agree with the conclusions of these trained observers, two facts do persist: Business volume *has* increased and security and commodity prices *have* risen. This may indicate that business sentiment has been worse than actual business itself. In any event, the advice to "prepare for improvement" seems not without reasonable foundation. But whatever the future, be it toward improvement or decline, the manufacturer who avails himself of our fine facilities, expert services, constant research and dependable materials, will find that through the combination of these he is fully prepared to derive the best possible advantage from either eventuality.

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skin may be caused but it is found that ingredients of a Violet perfume are rarely allergic to the skin with the possible exception of Heliotropine, which tends to smart the skin if present in too large quantities. Small quantities of Absolute Violet Leaves can also be used but this greatly increases the cost of the perfume. On examination of this product, it will be noticed that it does not, in any way, resemble the odor of the Violet but helps to impart the green leafy note which tends to round out the Ionones and Orris used in the formula. Small quantities of Musk Ketone can be used as a fixative agent as well as the Guaiac Wood, Sandalwood and Heliotropine.

It can be said that without the Ionones which have been developed, it would be very difficult for the perfumer to formulate the true Violet scent. Therefore the quality of each Ionone used in the formula should be carefully determined as to odor value. Various makers of Ionone products use different methods and there is a wide variation in their types as is the case in the Geraniols. The use of too large quantities of Ionone in the formula tends to temporarily deaden the sense of smell for a short period so the incorporation of too large quantity in the formula is not recommended. It would be difficult to go into detail with regard to each specific Violet perfume scent since there are so many variations to the general structure of any Violet composition but we believe that we have listed above a few basic suggestions which will help the novice in perfumery build a violet type which can be subjected to many variations.

NARCISSUS

Hydroxycitronellal is the most important base for a good narcissus perfume; then comes a good terpineol, preferably terpineol extra, while d-terpineol cryst. is also recommended for better quality extract oils; also a good lilac compound. Linalool also enters into consideration, but a linalool not merely bearing that name, but originating from bois de rose oil. Also of interest is ylang-ylang oil, which is replaced in cheaper compounds by Javanese cananga oil, especially in soaps.

Narcissus absolute should not be omitted from a good base, either in the form of the liquid or the concrete. In the production of extract oils of the blue narcissus type it is better to use a base somewhat corresponding to a good jonquil with a high proportion of hydroxycitronellal.

Extract oils of the "black narcissus" type contain a large proportion of orange substance, to which a bouquet is imparted with fatty aldehydes such as aldehyde C_{11}, methyl nonyl acetaldehyde, etc.

In the case of soap oils, the blue narcissus note is best achieved with linaloe oil Cayenne as base, particularly in combination with hyacinth substances such, for example, as bromstyrol, phenylacetaldehyde dimethylacetal, phenylacetaldehyde diamylacetal; a good jasmin composition based, in the case of cheap soaps, upon benzyl acetate in combination with methyl anthranilate and linalool, and in the case of better qualities upon a combination of alpha amyl cinnamic aldehyde and jasmin soap oils. On the other hand, compositions for black narcissus soap oils may be based upon hydroxycitronellal in combination with citronellol, ionone beta, linaloe oil Cayenne, and cedarwood oil; also, in the case of better quality soaps, in combination with cedryl acetate, but always with the orange note predominating.

For developing the bouquet, the following are mainly used: p.-cresyl acetate, p.-cresyl phenylacetate, m.-cresyl acetate and phenylacetate, p.-cresyl methyl ether, p.-cresyl butyrate or isobutyrate, alpha amyl cinnamic aldehyde, amyl salicylate, anisyl acetate, aubepine ex anethol (for black narcissus, preferably ex p.-cresol), bergamot oil, citronellyl butyrate, methyl eugenol, geranium oil African, hyacinth absolute, isobutyl phenylacetate, isoeugenol, neroli, petitgrain oil, phenylethyl acetate, phenylethyl phenylacetate, phenylacetaldehyde 50 per cent. solution, styrallyl valerianate, orris concrete.

The composition can be skilfully modified with aldehyde C_8 (10 per cent.), aldehyde C_{12} (10 per cent.), alcohols C_{10} and C_{12} (100 per cent.), amyl benzoate, anisyl acetate, benzaldehyde, cassie absolute, cinnamyl valerianate, citronellol, dimethyl anthranilate, dimethyl benzyl carbinol, fleurs d'oranger absolute, hydrocinnamic aldehyde, hydrocinnamic alcohol, indol (10 per cent.), jasmin absolute, jasmin synthetic, ionone alpha, jonquil absolute, linalyl acetate, methyl anisate, methyl anthranilate, narcissus absolute, octyl acetate, oenanthic ether, patchouli oil, phenylpropyl phenylacetate, rose synth., sandalwood oil E.I., skatol, styrallyl acetate, tuberose absolute.

Fixatives suitable for this type of complex include Benzoe Siam 50 per cent., ciste labdanum, costus resin, coumarin, heliotropin, musk ambrette, musk ketone, musk xylol, olibanum resin, oranger cryst. L.G., methyl naphthyl ketone, styrax, tolu balsam, tonka resin, vanilla resin, vanillin, amber tincture natural, civet tincture natural, cinnamic alcohol. *H. M. Dumont, S.P.C.*

BENZOIN

Benzoin balsam is obtained from the bark of Styrax benzoin Bryand of the family of Styracia. It is available commercially in the form of rounded pear-shaped pieces of a light yellow color called tears, divided into large and small tears, as well as the more usual massive form which is an agglomerate of broken, small tears.

The centers of production are Siam and Sumatra. The Siam product is of good quality.

Benzoin does not give an essential oil on steam distillation. Aside from resinous compounds with an acid reaction, it contains notable amounts of free benzoic acid and a little vanillin. These two constituents are responsible for the direct odor note of the benzoin. It is soluble in 95 per cent. alcohol and should leave not more than 5 per cent. of insoluble residue.

It is utilized in its natural state or as a concrete in perfumery and soaps, but especially as an absolute or in tincture form it is a valuable substance. The note of the tincture combined with that of tinctures of tolu and vanilla form an admirable beginning for a perfume.

ELEMI

This balsam is available in the form of a soft, yellow-white mass and is obtained from incisions in the bark of Canarium luzonicum. This tree grown in Manilla, Mexico, and South America. Elemi is almost completely soluble in various organic solvents. On steam distillation it gives a large quantity (10 to 25 per cent.) of an oil.

This oil has the characteristic note of the balsam: citrus and terpene. It consists for the most part of d-phellandrene and dipentene. These hydrocarbons impart the citrus note. Elemi enters into Eau de Cologne compositions and synthetic ambre.

PERMANENT WAVE PATENTS

A product for permanent waving is composed of a mixture of 20.5% of potassium sulfite, 43.3% of potassium carbonate and 36.2% of ammonium sulfite. The product is used in aqueous solution; owing to the content of sulfur dioxide, the solution has an almost neutral reaction and the cystine is not attacked. *P. R. Steinbach (Ass. Realistic Permanent Wave Machine Co.) U. S. Pat. 2,095,374.*

Solutions for waving contain sulfites of amines or hydrazines. Ex. 1: Dissolve in water 80 gr. of monoethanolamine sulfite, 60 gr. of monoethanolamine, 10 gr. of cyclohexanol, and make up to 1 litre. Ex. 2: Dissolve in water 37 gr. of hydrazine sulfite, 25 gr. of hydrazine hydrate, 10 gr. of cyclohexanol, and make up to 1 litre. Instead of cyclohexanol, 75 gr. of glycol distearate may be added to the mixture, which gives an emulsion. *N. V. S. Knibbs, English Pat. 472,745.*

A fatty composition aiding curling on the curling-pin, causing softening of the hair cells and providing protection from the action of heat. Ex.: Mix 25 gr. of wool fat, 5 gr. of sodium carbonate, 25 gr. of ammonium sulforicinoleate, 20 gr. of ammonium sulfite, 5 gr. of potassium carbonate, and 20 gr. of 22% ammonia solution. *C. Jouanny, French Pat. 813,334.*

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PARAPHENYLENE DIAMINE HAIR DYES

Para-phenylenediamine is a valuable dye base by virtue of its *two* amino groups in the 1:4 positions. The first stages in the oxidation involve a condensation of three molecules of the diamine to form Bandrowski's base with loss of three molecules of water Then three (or more) molecules of Bandrowski's base further condense to a complex azine which can add on hydrogen and form a colorless leuco compound. The tinctorial value and reactivity are due to the basic amino groups; so apparently is the toxicity.

How can the latter be reduced without affecting the former? Several possibilities have been or are being actively explored, at least three lines being followed. The effect of the introduction of acid or other groups either into the side chain or into the nucleus have been much studied, as also has the use of higher homologues and of diphenyl or naphthyl compounds. Others have experimented on the neutralization of the basic groups with carboxylic and dicarboxylic acids with view to buffer action and with the addition of tannins or other buffer compounds.

This line of attack is based upon an oft repeated statement that the irritant action of diamines is directly related to their basicity and that by diminishing this with an acid such as ortho-nitro-benzoic acid or salicylic acid no deleterious results will follow. According to experiments the matter is not so simple as this. Questions of osmotic pressure, rate of diffusion, oxygen absorption and specific chemical activity are involved. Moreover, such simple compounds may be hydrolyzed or dissociated when applied to the head or absorbed through the skin. So one is driven to explore a whole range of complex diamino compounds.

Consider first the homologous series base on benzene, toluene and xylene. The *p*-diamines are: *p*-phenylene diamine, *p*-toluylene diamine, and *p*-xylylene diamine.

The chemical reactivity diminishes as the series is ascended; the solubility in water diminishes but stability increases. The toluyl compound is nearly as active as the phenylene homologue; it is very deliquescent and is a good dye base, but since it is nearly as irritant as *p*-phenylene its use has no great advantage. The xylylene diamines are much less active but they are also more costly, less soluble and of distinctly lower tinctorial value. Moreover, a greater weight is required to provide the same amount of the final azine oxidation product. Hence the xylylene derivatives are not much used.

The introduction of a substituent into the side chain seems to afford a more hopeful line. Some useful dyes are easily obtain-

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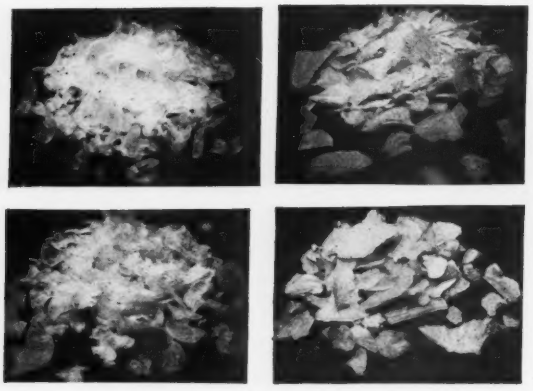

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able, such as methyl-*p*-phenylenediamine $C_6H_4.NH_2.NHCH_3$, and the di-methyl compound $C_6H_4.NH_2.N(C_3H)_2$, also known as *p*-amino-dimethylaniline; both these form good dark brown or black hair dyes. The tri- and tetra-methyl compounds have properties which suggest that they could be very useful, but they have not been thoroughly explored from this point of view.

The acetyl and sulfonic acid derivatives of para are used both as fur dyes and hair dyes. The familiar Ursol A contained the mono-acetyl product $C_6H_4.NH_2.NH.CO.CH_3$, or amino acetanilide; this compound and the coorrespnding sulfonic acid derivative $C_6H_4.NH_2.NH.HSO_3$, are both more stable than parent para, and it is in general true that the introduction of an acidic group reduces both the toxicity and the tinctorial power. The introduction of an alkyl group, on the other hand, tends to enhance oxidizability and tinctorial power, but there is no evidence available on toxicity. In the case of the phenyl derivative $C_6H_4.NH_2.NH.C_6H_5$ (*p*-amino-diphenylamine), there is evidence that it is less toxic; it finds use in several brands of hair dye as it produces good black colors.

In compounding a hair dye from any of the diamino derivatives it has to be remembered that they are less oxidizable and yield less weight of the final azine derivative, so a greater proportion of base is required than with the straight para. Thus a black shade based on para might contain

Phenylene diamine	2.5%
Dihydric phenol	2.0%
Amino phenol	1.0%

and if the phenyl derivative were used it would be necessary to use about 3.5 per cent. to get a similar depth of color.

The success attending the use of *p*-amino-diphenylamine leads to the consideration of the diamino derivatives which may be expected to be more reactive. There are three common diamino diphenylamines, namely, 2,4-diamino diphenylamine; 2,4′-diamino diphenylamine; 4,4′-diamino diphenylamine.

Of these, the 4,4 compound is the most efficient dye base; it enters into some known compositions and at about 3 per cent. concentration gives a good black color which may be assisted by resorcinol. Some derivatives of toluylene diamine deserve mention, particularly the benzyl and naphthyl compounds; these, when oxidized in the presence of traces of metals, give brown grey shades, but are not adequate substitutes for para, since they do not yield dark colors unless combined with relatively large proportions of metals.

These are a few of the more useful derivatives of para obtained by substitution of the side chain. If substitution in the ring is included, a great variety of potentially useful compounds is available. The general effect of such substitution is more marked than a corresponding addition to the side chain. Nevertheless, some very useful compounds have been prepared and patented, *e.g.*, nitro- and chloro-*p*-phenylene diamines which give good dark brown and reddish brown shades on oxidation. If a hydroxy group is introduced the product becomes of a very reactive type such as a diaminophenol or a diaminoanisole. Both of these compounds are in use and give good dark shades. In general, the derivatives of phenol or other hydroxy compounds tend more to brown than pure blacks. These are apparently less irritating than para phenylene diamine. *H. E. Cox, Manuf. Perf.*

WAVE SET CONCENTRATE

Although other gums, and especially pectin, have largely replaced it, quince seed mucilage remains a favorite for quality wave setting preparations. It seems to give a minimum of flaking and has desirable stringiness, as well as other appealing qualities. Its great disadvantage has been the manipulation required to make a satisfactory finished wave-set. The seeds are either allowed to swell in water overnight and the mucilage separated from husks by passage through cheesecloth, or the process is conducted more rapidly by heating the water. In the latter case, there is danger of discoloration unless the heat is very carefully regulated. Preservation must be provided for during, as well as after the extraction process. Much mucilage is necessarily wasted in the extraction and filtering stages.

A quince seed mucilage concentrate is now available which is likely to restore this gum to its preeminence. The concentrate extracted on a large scale from the seeds is a thick, relatively light-colored paste which very rapidly disperses in water to give a clear, colorless, stringy gum solution. It is preserved in its paste and diluted form and can easily be colored and perfumed as desired. About eight ounces of the concentrate to a gallon make a high quality finished preparation. *Trade Scientific Laboratories, 40 E. 21st Street, New York.*

ISOPROPANOLAMINE

Triethanolamine will occasionally make creams that are off-white, or will darken on standing. Mixed isopropanolamines, now available, comprise an almost colorless liquid that can be used interchangeably with triethanolamine, but with two important advantages. The soaps formed are non-darkening and they are completely soluble in hydrocarbons. The mixture has been so adjusted that the combining weight is the same as that of triethanolaimne and no change of any kind in manufacturing procedure is required. Pure triisopropanolamine is a white, crystalline solid, melting at 45° C., soluble in water, the mixture being preferable on the grounds of economy for most cosmetic purposes. *Carbide and Carbon Chemicals, New York.*

GRAPE SEED OIL

Refined grape seed oil, offered for use in cosmetics, is a practically colorless and odorless oil and has excellent keeping qualities. It is particularly well adapted to the manufacture of stable creams and lotions, hair preparations, shaving creams, etc. It consists of the glycerides of oleic acid 33.5 per cent., linoleic acid 52.7 per cent., linolenic acid 2.4 per cent., palmitic acid 6.3 per cent., stearic acid 2.9 per cent., arachidic acid 0.1 per cent. Its important constants are tabulated below:

Refractive index at 25°C.	1.4735
Specific gravity at 20°C.	0.92283
Acid Value	0.4
Saponification Value	193.1
Iodine Value	118.0
Ester Value	192.7
Acetyl Value	18.0
Melting Point	−10.0°C.

Gerard J. Danco, Inc., New York.

GLYCO COSMETIC MANUAL

This manual is a 94 page vest pocket size book bound in blue Fabrikoid and gives information on the manufacture of all types of cosmetic preparations. It also includes manufacturing hints and a valuable feature is a list of sources of supply for important raw materials. The manual is available from Glyco Products Co., 148 Lafayette Street, New York, on receipt of 25 cents.

SUN SCREEN PATENT

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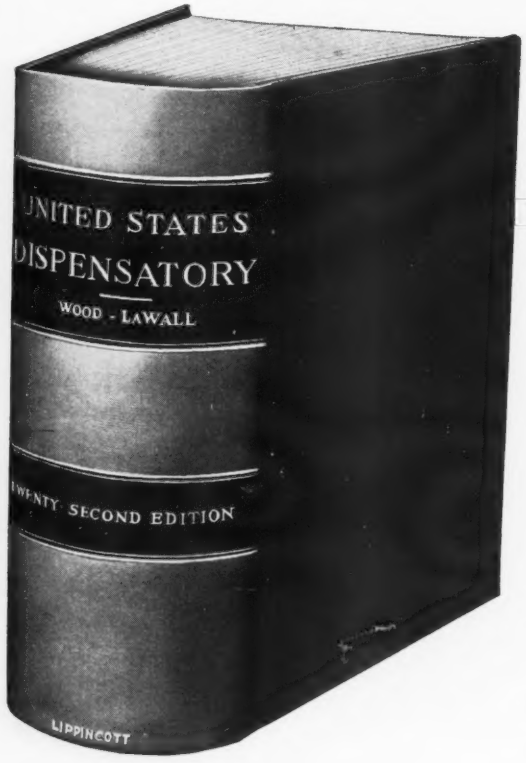

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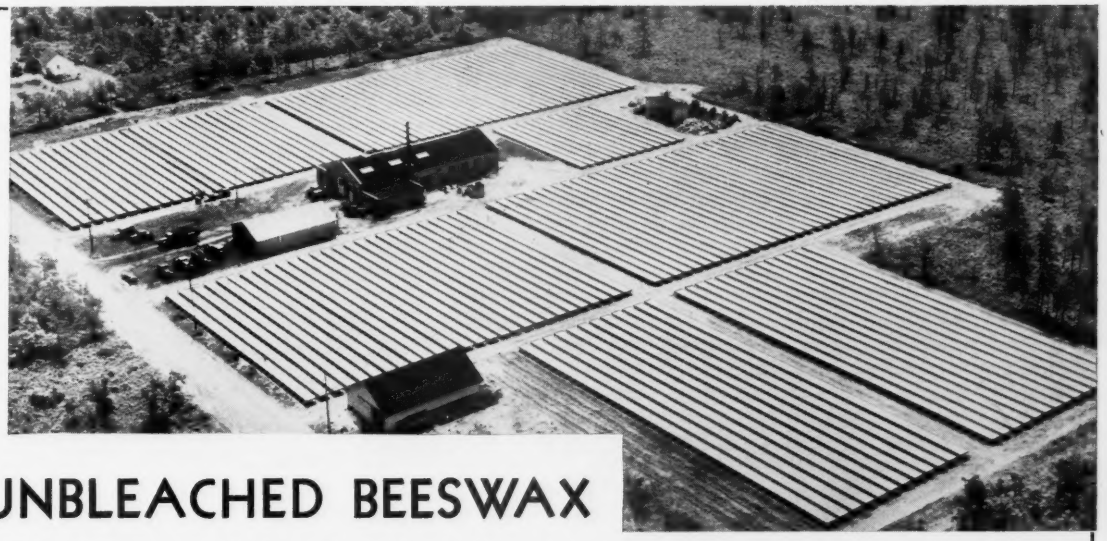

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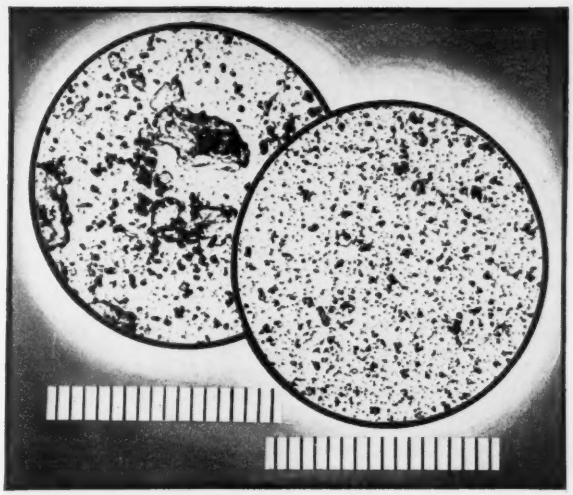

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Up until 1937, when vitamin B extract became available in large quantities, alcoholic psychoses were a serious and unmanageable problem. Since that time it has been possible to treat such conditions with a great deal of success. Of thirty-six cases that Brodsky treated, thirty-five are apparently cured. It is too early as yet to state definitely whether the cure will be permanent. All the chronic alcoholic psychoses treated were based on a history of alcoholism over a considerable period with hallucinations, particularly of the auditory threatening type, fear and disorientation. The treatment was as follows: (1) the removal if possible of alcohol, (2) daily injections of massive doses of crystalline vitamin B in the gluteal muscle, the dosage being anywhere from 500 to 2,000 units daily and (3) the administration of some such sedative as bromide, chloral and, in some cases, phenobarbital. Prompt improvement was observed in all cases within a period of weeks or months and an absolute cessation of all symptoms even though they had lasted for some time. There was no recurrence of a desire for alcohol. This peculiarity was noticed also in acute alcoholic psychoses. The acute psychoses were treated with spinal drainage and daily hypodermic injections of vitamin B into the gluteal muscles in small doses such as from 300 to 500 units, and these also showed an improvement and a lack of desire to return to the former habits. *Conn. State Med. Soc. J. vol. 2, p. 228.*

POTASSIUM AND URTICARIA

It seems logical to Rusk and Kenamore that potassium should be a valuable drug in the treatment of edematous lesions of the skin: first it lowers the cutaneous irritability directly and secondly its pharmacologic reaction is similar to and definitely allied with epinephrine. The results in six cases are far from conclusive but definitely indicate the therapeutic response. These patients had been tried on the various allergic regimens and orthodox treatment without success. A high protein, low sodium, acid-ash diet, with added potassium chloride, has produced promising clinical results in six cases of chronic urticaria. *Ann. Intern. Med. vol. 11, p. 1838.*

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Shellow reports three cases of dermatitis and mentions four others following the use of dry shavers. Although the dry shaving method has often been successfully employed to reduce the amount of irritation to the skin, two factors may be responsible for the eruption. The lack of preparation in the use of the dry shaver may lead to neglect of washing the skin, thereby increasing the likelihood of infection. There is also traumatization resulting from the desire to obtain as close a shave with the dry shaver as with the ordinary razor. Observations have shown that this is almost impossible to achieve, but in an attempt to do so there is a tendency to cause constant manipulation or overuse of the device. The vigorous application leads to trauma by virtue of the fact that the head of the shaver is massaged on the skin, thereby producing irritation which leads to dermatitis. *J.A.M.A., vol. 110, p. 1748.*

SYNTHETIC AND NATURAL EPHEDRINE

The toxicity on mice, pressor action on spinal cats or cats anesthetized with nembutal, pressor action on unanesthetized rabbits, and the effect on blood sugar in the rabbit have been determined for natural and synthetic levo ephedrine. From these tests synthetic and natural levo-ephedrine would appear to have identical actions. *E. C. Dodds and R. L. Noble, Pharm. J. 1938, p. 641.*

MAGNESIUM SULFATE IN WHOOPING COUGH

Soto Pradera calls attention to the value of magnesium sulfate as a symptomatic treatment of whooping cough. He gave daily intra-muscular injections of a 10 per cent. solution of magnesium sulfate to forty patients (thirty-eight infants and children and two adults). The dose varied from 0.25 to 1.1 cc. per kilogram of body weight until from fifteen to twenty injections had been given, according to the stage of the disease. The patients' urine was normal before, during and after the treatment. There was a decrease in coughing and vomiting early in the course of the treatment in thirty cases, with consequent clinical control of the disease after about fifteen injections. The treatment failed in ten cases. According to the author the treatment has an antispasmodic and sedative effect, by which the evolution and duration of whooping cough are favorably modified. The results were better than those he obtained in a group of 107 cases which were managed by the administration of common symptomatic treatments (antipyrine, belladonna, sodium bicarbonate and ether by rectum). Chronic nephritis contraindicates the treatment. Satisfactory results have been previously reported in Argentina. The author advises the preparation of a 50 per cent. solution of magnesium sulfate instead of the 10 per cent. solution which he used and to give injections in doses of 0.2 cc. per kilogram of body weight. The dose is well tolerated and the volume of the injection is smaller than that used in more dilute solutions and causes neither pain nor local inflammatory reaction. *Bol. Soc. Pub. Ped. vol. 10, p. 173.*

COPPER SULFATE TREATMENT OF TROPICAL ULCER

Gunther states that tropical ulcer and New Guinea mouth disease differ only as to the site of occurrence; each is fundamentally due to food deficiency, each presents a foul, sloughing ulcer, from each a spirochete and a fusiform bacillus can be isolated and each responds to the same form of treatment. The two conditions are almost entirely confined to natives. The first essential in general treatment is a diet rich in vitamins. The patients are not given rice but receive abundance of fresh vegetables; an autolyzed yeast preparation and cod liver oil are added. In local treatment copper sulfate acts with such rapidity in comparison with other forms of treatment that it can be regarded as specific. It is best used as a solution of 1 in 150 approximately. It is applied as a wet compress to ulcers and employed as a mouth wash in New Guinea mouth disease and as a continuous bath for tropical ulcer. No ill effects have been observed from its use. *Med. J. Austral. vol. 1, p. 348.*

ANTISEPTIC IN MILK

Human or cow milk added to an equal volume of agar did not support the growth or allowed only slight growth of B. diphtheriae, Staph. aureus, B. coli, B. prodigiosus, B. pyocyaneus, B. anthracis, streptococci, and unidentified wild yeast. The factors in human milk inhibiting bacterial growth ("inhibins") were inactivated by heating at 56 degrees C. for thirty minutes or by standing twelve to twenty four days at 5 degrees C., but not by repeated freezing and thawing. The "inhibins" in cow's milk were not inactivated by heating at 80 degrees C. for seven minutes but were destroyed by heating at 85 degrees C. for seven minutes. Attempts have not been made to identify the natural antiseptics. *H. Dold, E. Wizaman, C. Kleiner, Z. Hyt. Inf.*

GOLD SALTS IN CHRONIC CARDITIS

The author gives a detailed report of eleven cases of chronic carditis in adults in which treatment by gold salts was given with good results. In the eleven cases reported myochrysine was given in eight instances oleochrysine in three, allochrysine in one and both oleochrysine and myochrysine in another case. The immediate results were successful, and the general condition of the patients improved. Cardiac function was better, pain was relieved and the dyspnoea was diminished. Treatment appeared to have arrested the development of the disease, although it did not cure it. In many cases improvement continued, although the end-results of the treatment have yet to be estimated. *M. Wybauw. Scalpel, Liege.*

TREATING ENCEPHALITIS WITH BENZEDRINE SULFATE

Matthews enumerates the clinical results observed in twenty patients with chronic encephalitis having a parkinsonian syndrome treated with benzedrine sulfate, eighteen of whom have been receiving the drug by mouth for a period of from six to twelve months. Fifteen patients have shown definite sustained improvement which must be attributed to benzedrine alone, since no change was made in the medical regimen which was previously being carried out. The results have been encouraging and suggest further investigations. Patients repeatedly reported an aggravation of symptoms when they were without the drug for a few days. Benzedrine enhances the effect of stramonium, atropine and scopolamine and is best used in conjunction with these drugs in the treatment of postencephalitic parkinsonism. *Amer. J. Med. Sci. vol. 195, p. 448.*

UREA FOR WOUNDS

For the last year Baker has used from 25 to 30 per cent. solutions of urea for the treatment of wound infections. Results have been uniformly gratifying. It has been found to be stable in solution, nontoxic and remarkably effective in the removal of wound exudates, bringing about normal repair of tissues through its passive mechanical cleansing action. The material has been used in the same concentrations for the irrigation of wound sinuses. Open wounds demonstrating infection, fistulas or sloughs of the abdominal wall following operation, chronic discharging ulcerous areas, sinus tracts resultant from chronic bone infections and the like have undergone treatment with urea. Within a few days after institution of treatment the indolent areas of the wound begin to assume a freshened pink appearance and have a tendency to bleed freely. Wound exudates are readily extruded. Improvement is definite and continued. The odor from draining wounds is reduced to a minimum, often disappearing entirely. Pain due to prolonged use may be overcome by either reducing the strength of the solution slightly or by the use of a mild sedative before renewing the dressings or beginning the irrigations. *Rocky Mt. Med. J. vol. 35, p. 310.*

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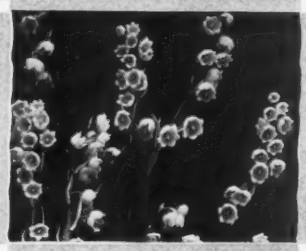

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This improved product imparts the true fragrance of Lily-of-the-Valley. May be used as a basic perfume or in compounds. Very adaptable and will not discolor.

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This is one of the few truly fine lilacs available to the perfumer. Reproduces perfectly the sweet freshness of Purple Lilac Blossoms. A basic material suitable for many applications.

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The above FRITZBRO Specialties may be used in combination with other aromatics to produce distinctive and appealing tonal effects. As basic materials for extract work they require simple blending with the proper tinctures and floral washings. In creams, lotions, powders and other cosmetic preparations, they may be used without further blending or fixation. Write us for samples and specific recommendations for your particular product.

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LET your extracts and cosmetics reach a new high in sales appeal through the use of one or more of these selected FRITZBRO Specialties. Each is a masterpiece of diligent research and skillful blending—a distinct floral type, broad in application and of an odor-fineness wholly unsuggestive of its synthetic composition. Our liberal use of natural flower extractions is, of course, largely accountable for the true, plantlike character of these distinctive perfume materials. And while this factor adds measurably to their odor value, it does not lift them above the price range of ordinary synthetics. *That* is an advantage made possible by the operation of our own manufacturing and extraction plants here and abroad. Thus, by control and restriction of profits, we are able to employ the finest ingredients in these and all other of our products without excessive cost to the user.

Bear this point in mind when choosing your next source of aromatic necessities. Bear in mind, too, these five particular specialties; their use will assure your product a decidedly *better* fragrance!

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skin may be caused but it is found that ingredients of a Violet perfume are rarely allergic to the skin with the possible exception of Heliotropine, which tends to smart the skin if present in too large quantities. Small quantities of Absolute Violet Leaves can also be used but this greatly increases the cost of the perfume. On examination of this product, it will be noticed that it does not, in any way, resemble the odor of the Violet but helps to impart the green leafy note which tends to round out the Ionones and Orris used in the formula. Small quantities of Musk Ketone can be used as a fixative agent as well as the Guaiac Wood, Sandalwood and Heliotropine.

It can be said that without the Ionones which have been developed, it would be very difficult for the perfumer to formulate the true Violet scent. Therefore the quality of each Ionone used in the formula should be carefully determined as to odor value. Various makers of Ionone products use different methods and there is a wide variation in their types as is the case in the Geraniols. The use of too large quantities of Ionone in the formula tends to temporarily deaden the sense of smell for a short period so the incorporation of too large quantity in the formula is not recommended. It would be difficult to go into detail with regard to each specific Violet perfume scent since there are so many variations to the general structure of any Violet composition but we believe that we have listed above a few basic suggestions which will help the novice in perfumery build a violet type which can be subjected to many variations.

NARCISSUS

Hydroxycitronellal is the most important base for a good narcissus perfume; then comes a good terpineol, preferably terpineol extra, while d-terpineol cryst. is also recommended for better quality extract oils; also a good lilac compound. Linalool also enters into consideration, but a linalool not merely bearing that name, but originating from bois de rose oil. Also of interest is ylang-ylang oil, which is replaced in cheaper compounds by Javanese cananga oil, especially in soaps.

Narcissus absolute should not be omitted from a good base, either in the form of the liquid or the concrete. In the production of extract oils of the blue narcissus type it is better to use a base somewhat corresponding to a good jonquil with a high proportion of hydroxycitronellal.

Extract oils of the "black narcissus" type contain a large proportion of orange substance, to which a bouquet is imparted with fatty aldehydes such as aldehyde C_{11}, methyl nonyl acetaldehyde, etc.

In the case of soap oils, the blue narcissus note is best achieved with linaloe oil Cayenne as base, particularly in combination with hyacinth substances such, for example, as bromstyrol, phenylacetaldehyde dimethylacetal, phenylacetaldehyde diamylacetal; a good jasmin composition based, in the case of cheap soaps, upon benzyl acetate in combination with methyl anthranilate and linalool, and in the case of better qualities upon a combination of alpha amyl cinnamic aldehyde and jasmin soap oils. On the other hand, compositions for black narcissus soap oils may be based upon hydroxycitronellal in combination with citronellol, ionone beta, linaloe oil Cayenne, and cedarwood oil; also, in the case of better quality soaps, in combination with cedryl acetate, but always with the orange note predominating.

For developing the bouquet, the following are mainly used: p.-cresyl acetate, p.-cresyl phenylacetate, m.-cresyl acetate and phenylacetate, p.-cresyl methyl ether, p.-cresyl butyrate or isobutyrate, alpha amyl cinnamic aldehyde, amyl salicylate, anisyl acetate, aubepine ex anethol (for black narcissus, preferably ex p.-cresol), bergamot oil, citronellyl butyrate, methyl eugenol, geranium oil African, hyacinth absolute, isobutyl phenylacetate, isoeugenol, neroli, petitgrain oil, phenylethyl acetate, phenylethyl phenylacetate, phenylacetaldehyde 50 per cent. solution, styrallyl valerianate, orris concrete.

The composition can be skilfully modified with aldehyde C_8 (10 per cent.), aldehyde C_{12} (10 per cent.), alcohols C_{10} and C_{12} (100 per cent.), amyl benzoate, anisyl acetate, benzaldehyde, cassie absolute, cinnamyl valerianate, citronellol, dimethyl anthranilate, dimethyl benzyl carbinol, fleurs d'oranger absolute, hydrocinnamic aldehyde, hydrocinnamic alcohol, indol (10 per cent.), jasmin absolute, jasmin synthetic, ionone alpha, jonquil absolute, linalyl acetate, methyl anisate, methyl anthranilate, narcissus absolute, octyl acetate, oenanthic ether, patchouli oil, phenylpropyl phenylacetate, rose synth., sandalwood oil E.I., skatol, styrallyl acetate, tuberose absolute.

Fixatives suitable for this type of complex include Benzoe Siam 50 per cent., ciste labdanum, costus resin, coumarin, heliotropin, musk ambrette, musk ketone, musk xylol, olibanum resin, oranger cryst. L.G., methyl naphthyl ketone, styrax, tolu balsam, tonka resin, vanilla resin, vanillin, amber tincture natural, civet tincture natural, cinnamic alcohol. *H. M. Dumont, S.P.C.*

BENZOIN

Benzoin balsam is obtained from the bark of Styrax benzoin Bryand of the family of Styracia. It is available commercially in the form of rounded pear-shaped pieces of a light yellow color called tears, divided into large and small tears, as well as the more usual massive form which is an agglomerate of broken, small tears.

The centers of production are Siam and Sumatra. The Siam product is of good quality.

Benzoin does not give an essential oil on steam distillation. Aside from resinous compounds with an acid reaction, it contains notable amounts of free benzoic acid and a little vanillin. These two constituents are responsible for the direct odor note of the benzoin. It is soluble in 95 per cent. alcohol and should leave not more than 5 per cent. of insoluble residue.

It is utilized in its natural state or as a concrete in perfumery and soaps, but especially as an absolute or in tincture form it is a valuable substance. The note of the tincture combined with that of tinctures of tolu and vanilla form an admirable beginning for a perfume.

ELEMI

This balsam is available in the form of a soft, yellow-white mass and is obtained from incisions in the bark of Canarium luzonicum. This tree grown in Manilla, Mexico, and South America. Elemi is almost completely soluble in various organic solvents. On steam distillation it gives a large quantity (10 to 25 per cent.) of an oil.

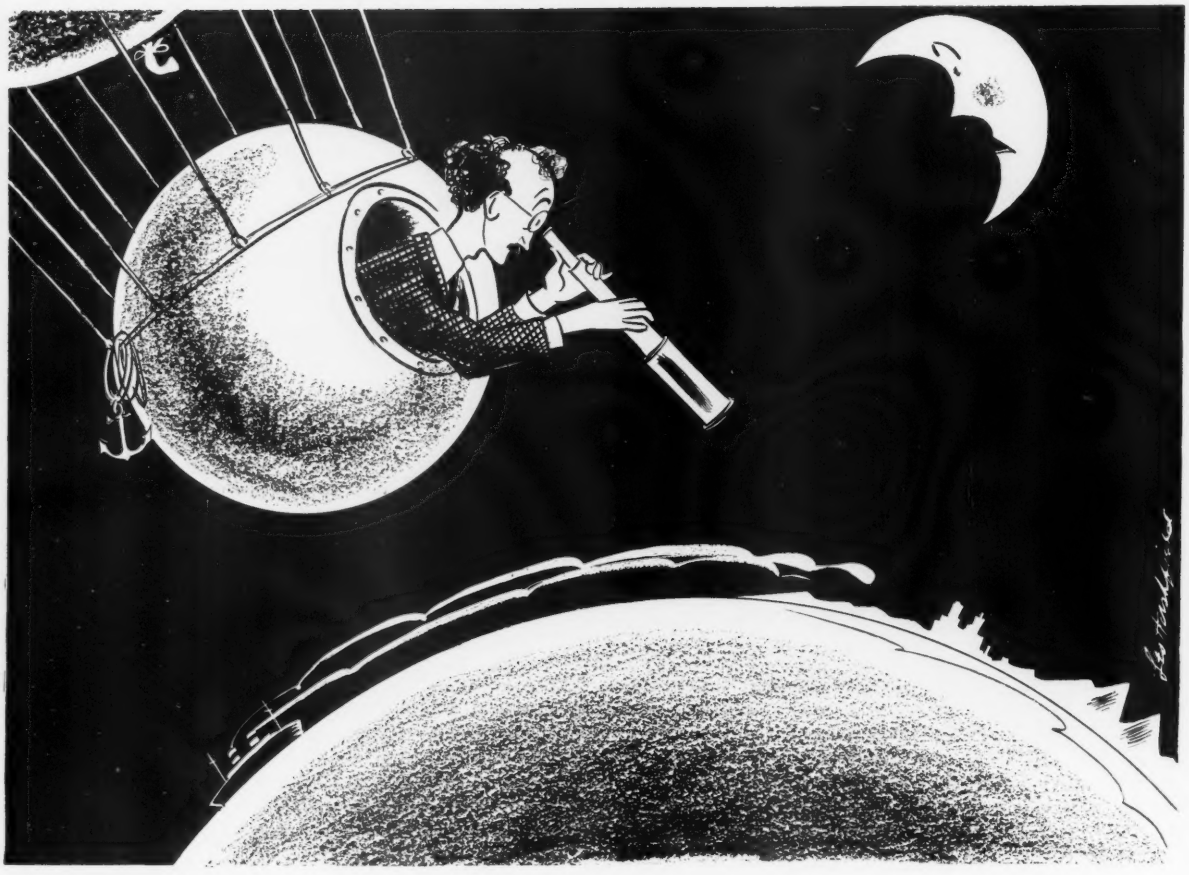
This oil has the characteristic note of the balsam: citrus and terpene. It consists for the most part of d-phellandrene and dipentene. These hydrocarbons impart the citrus note. Elemi enters into Eau de Cologne compositions and synthetic ambre.

PERMANENT WAVE PATENTS

A product for permanent waving is composed of a mixture of 20.5% of potassium sulfite, 43.3% of potassium carbonate and 36.2% of ammonium sulfite. The product is used in aqueous solution; owing to the content of sulfur dioxide, the solution has an almost neutral reaction and the cystine is not attacked. *P. R. Steinbach (Ass. Realistic Permanent Wave Machine Co.) U. S. Pat. 2,095,374.*

Solutions for waving contain sulfites of amines or hydrazines. Ex. 1: Dissolve in water 80 gr. of monoethanolamine sulfite, 60 gr. of monoethanolamine, 10 gr. of cyclohexanol, and make up to 1 litre. Ex. 2: Dissolve in water 37 gr. of hydrazine sulfite, 25 gr. of hydrazine hydrate, 10 gr. of cyclohexanol, and make up to 1 litre. Instead of cyclohexanol, 75 gr. of glycol distearate may be added to the mixture, which gives an emulsion. *N. V. S. Knibbs, English Pat. 472,745.*

A fatty composition aiding curling on the curling-pin, causing softening of the hair cells and providing protection from the action of heat. Ex.: Mix 25 gr. of wool fat, 5 gr. of sodium carbonate, 25 gr. of ammonium sulforicinoleate, 20 gr. of ammonium sulfite, 5 gr. of potassium carbonate, and 20 gr. of 22% ammonia solution. *C. Jouanny, French Pat. 813,334.*



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PARAPHENYLENE DIAMINE HAIR DYES

Para-phenylenediamine is a valuable dye base by virtue of its *two* amino groups in the 1:4 positions. The first stages in the oxidation involve a condensation of three molecules of the diamine to form Bandrowski's base with loss of three molecules of water Then three (or more) molecules of Bandrowski's base further condense to a complex azine which can add on hydrogen and form a colorless leuco compound. The tinctorial value and reactivity are due to the basic amino groups; so apparently is the toxicity.

How can the latter be reduced without affecting the former? Several possibilities have been or are being actively explored, at least three lines being followed. The effect of the introduction of acid or other groups either into the side chain or into the nucleus have been much studied, as also has the use of higher homologues and of diphenyl or naphthyl compounds. Others have experimented on the neutralization of the basic groups with carboxylic and dicarboxylic acids with view to buffer action and with the addition of tannins or other buffer compounds.

This line of attack is based upon an oft repeated statement that the irritant action of diamines is directly related to their basicity and that by diminishing this with an acid such as ortho-nitro-benzoic acid or salicylic acid no deleterious results will follow. According to experiments the matter is not so simple as this. Questions of osmotic pressure, rate of diffusion, oxygen absorption and specific chemical activity are involved. Moreover, such simple compounds may be hydrolyzed or dissociated when applied to the head or absorbed through the skin. So one is driven to explore a whole range of complex diamino compounds.

Consider first the homologous series base on benzene, toluene and xylene. The *p*-diamines are: *p*-phenylene diamine, *p*-toluylene diamine, and *p*-xylylene diamine.

The chemical reactivity diminishes as the series is ascended; the solubility in water diminishes but stability increases. The toluyl compound is nearly as active as the phenylene homologue; it is very deliquescent and is a good dye base, but since it is nearly as irritant as *p*-phenylene its use has no great advantage. The xylylene diamines are much less active but they are also more costly, less soluble and of distinctly lower tinctorial value. Moreover, a greater weight is required to provide the same amount of the final azine oxidation product. Hence the xylylene derivatives are not much used.

The introduction of a substituent into the side chain seems to afford a more hopeful line. Some useful dyes are easily obtain-

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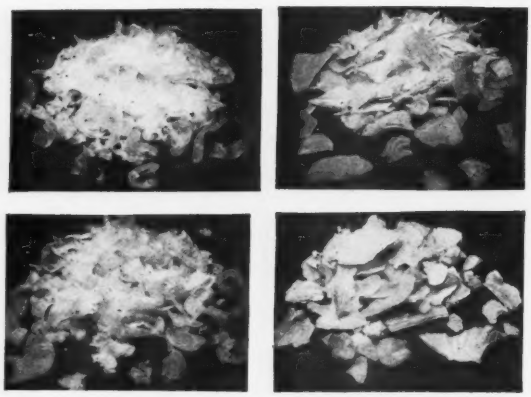

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able, such as methyl-*p*-phenylenediamine $C_6H_4.NH_2.NHCH_3$, and the di-methyl compound $C_6H_4.NH_2.N(C_3H)_2$, also known as *p*-amino-dimethylaniline; both these form good dark brown or black hair dyes. The tri- and tetra-methyl compounds have properties which suggest that they could be very useful, but they have not been thoroughly explored from this point of view.

The acetyl and sulfonic acid derivatives of para are used both as fur dyes and hair dyes. The familiar Ursol A contained the mono-acetyl product $C_6H_4.NH_2.NH.CO.CH_3$, or amino acetanilide; this compound and the coorrespnding sulfonic acid derivative $C_6H_4.NH_2.NH.HSO_3$, are both more stable than parent para, and it is in general true that the introduction of an acidic group reduces both the toxicity and the tinctorial power. The introduction of an alkyl group, on the other hand, tends to enhance oxidizability and tinctorial power, but there is no evidence available on toxicity. In the case of the phenyl derivative $C_6H_4.NH_2.NH.C_6H_5$ (*p*-amino-diphenylamine), there is evidence that it is less toxic; it finds use in several brands of hair dye as it produces good black colors.

In compounding a hair dye from any of the diamino derivatives it has to be remembered that they are less oxidizable and yield less weight of the final azine derivative, so a greater proportion of base is required than with the straight para. Thus a black shade based on para might contain

Phenylene diamine	2.5%
Dihydric phenol	2.0%
Amino phenol	1.0%

and if the phenyl derivative were used it would be necessary to use about 3.5 per cent. to get a similar depth of color.

The success attending the use of *p*-amino-diphenylamine leads to the consideration of the diamino derivatives which may be expected to be more reactive. There are three common diamino diphenylamines, namely, 2,4-diamino diphenylamine; 2,4′-diamino diphenylamine; 4,4′-diamino diphenylamine.

Of these, the 4,4 compound is the most efficient dye base; it enters into some known compositions and at about 3 per cent. concentration gives a good black color which may be assisted by resorcinol. Some derivatives of toluylene diamine deserve mention, particularly the benzyl and naphthyl compounds; these, when oxidized in the presence of traces of metals, give brown grey shades, but are not adequate substitutes for para, since they do not yield dark colors unless combined with relatively large proportions of metals.

These are a few of the more useful derivatives of para obtained by substitution of the side chain. If substitution in the ring is included, a great variety of potentially useful compounds is available. The general effect of such substitution is more marked than a corresponding addition to the side chain. Nevertheless, some very useful compounds have been prepared and patented, *e.g.*, nitro- and chloro-*p*-phenylene diamines which give good dark brown and reddish brown shades on oxidation. If a hydroxy group is introduced the product becomes of a very reactive type such as a diaminophenol or a diaminoanisole. Both of these compounds are in use and give good dark shades. In general, the derivatives of phenol or other hydroxy compounds tend more to brown than pure blacks. These are apparently less irritating than para phenylene diamine. *H. E. Cox, Manuf. Perf.*

WAVE SET CONCENTRATE

Although other gums, and especially pectin, have largely replaced it, quince seed mucilage remains a favorite for quality wave setting preparations. It seems to give a minimum of flaking and has desirable stringiness, as well as other appealing qualities. Its great disadvantage has been the manipulation required to make a satisfactory finished wave-set. The seeds are either allowed to swell in water overnight and the mucilage separated from husks by passage through cheesecloth, or the process is conducted more rapidly by heating the water. In the latter case, there is danger of discoloration unless the heat is very carefully regulated. Preservation must be provided for during, as well as after the extraction process. Much mucilage is necessarily wasted in the extraction and filtering stages.

A quince seed mucilage concentrate is now available which is likely to restore this gum to its preeminence. The concentrate extracted on a large scale from the seeds is a thick, relatively light-colored paste which very rapidly disperses in water to give a clear, colorless, stringy gum solution. It is preserved in its paste and diluted form and can easily be colored and perfumed as desired. About eight ounces of the concentrate to a gallon make a high quality finished preparation. *Trade Scientific Laboratories, 40 E. 21st Street, New York.*

ISOPROPANOLAMINE

Triethanolamine will occasionally make creams that are off-white, or will darken on standing. Mixed isopropanolamines, now available, comprise an almost colorless liquid that can be used interchangeably with triethanolamine, but with two important advantages. The soaps formed are non-darkening and they are completely soluble in hydrocarbons. The mixture has been so adjusted that the combining weight is the same as that of triethanolaimne and no change of any kind in manufacturing procedure is required. Pure triisopropanolamine is a white, crystalline solid, melting at 45° C., soluble in water, the mixture being preferable on the grounds of economy for most cosmetic purposes. *Carbide and Carbon Chemicals, New York.*

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Refined grape seed oil, offered for use in cosmetics, is a practically colorless and odorless oil and has excellent keeping qualities. It is particularly well adapted to the manufacture of stable creams and lotions, hair preparations, shaving creams, etc. It consists of the glycerides of oleic acid 33.5 per cent., linoleic acid 52.7 per cent., linolenic acid 2.4 per cent., palmitic acid 6.3 per cent., stearic acid 2.9 per cent., arachidic acid 0.1 per cent. Its important constants are tabulated below:

Refractive index at 25°C.	1.4735
Specific gravity at 20°C.	0.92283
Acid Value	0.4
Saponification Value	193.1
Iodine Value	118.0
Ester Value	192.7
Acetyl Value	18.0
Melting Point	−10.0°C.

Gerard J. Danco, Inc., New York.

GLYCO COSMETIC MANUAL

This manual is a 94 page vest pocket size book bound in blue Fabrikoid and gives information on the manufacture of all types of cosmetic preparations. It also includes manufacturing hints and a valuable feature is a list of sources of supply for important raw materials. The manual is available from Glyco Products Co., 148 Lafayette Street, New York, on receipt of 25 cents.

SUN SCREEN PATENT

Dibenzalacetone absorbs ultra-violet rays better than any other product at present in use. In 0.1% alcoholic solution, a layer of 2 mm. thickness completely absorbs rays of wavelength from 2900 to 3000 A.U. The product, faintly yellow colored, is soluble in vegetable and animal oils, fats, waxes, and analogous synthetic products. For protection from the action of the sun, the use of 0.5 to 2.5% of dibenzalacetone is effective. Ex. 1: Melt, on a water-bath, 8 p. of white wax, 15 p. of petrolatum, 10 p. of spermaceti, 5 p. of lanolin and 55 p. of almond oil; dissolve in this 1 to 3 p. of dibenzalacetone and stir vigorously, adding a little borax solution. Perfume as desired. Ex. 2: Dissolve 0.5 to 2.5 gr. of dibenzalacetone in almond, olive, sesame or other vegetable oils; add mineral oil and a perfume. Ex. 3: Using suitable fats and oils, in which 1-3 % of dibenzalacetone has been dissolved, a cream is prepared by emulsification in water. An absorptive agent soluble in water, such as esculine or beta-umbelliferone acetic acid, may also be dissolved in the weakly alkaline aqueous phase. *E. Merck Chem. Fabr. Ger. Pat. 652,929.*

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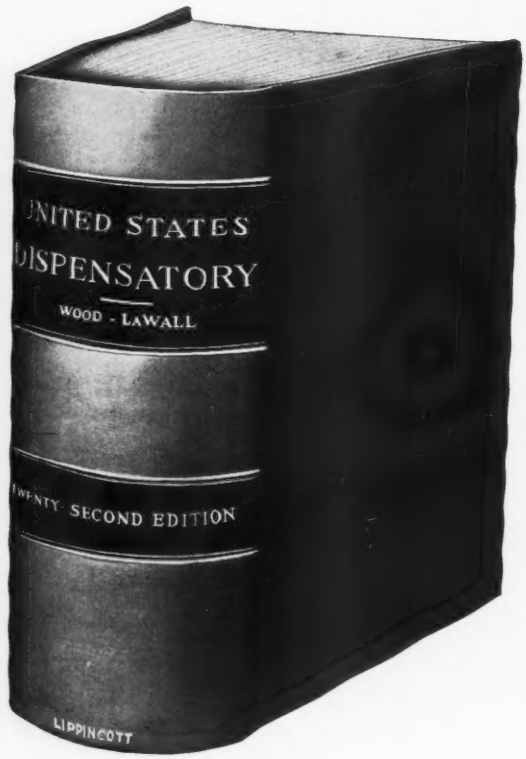

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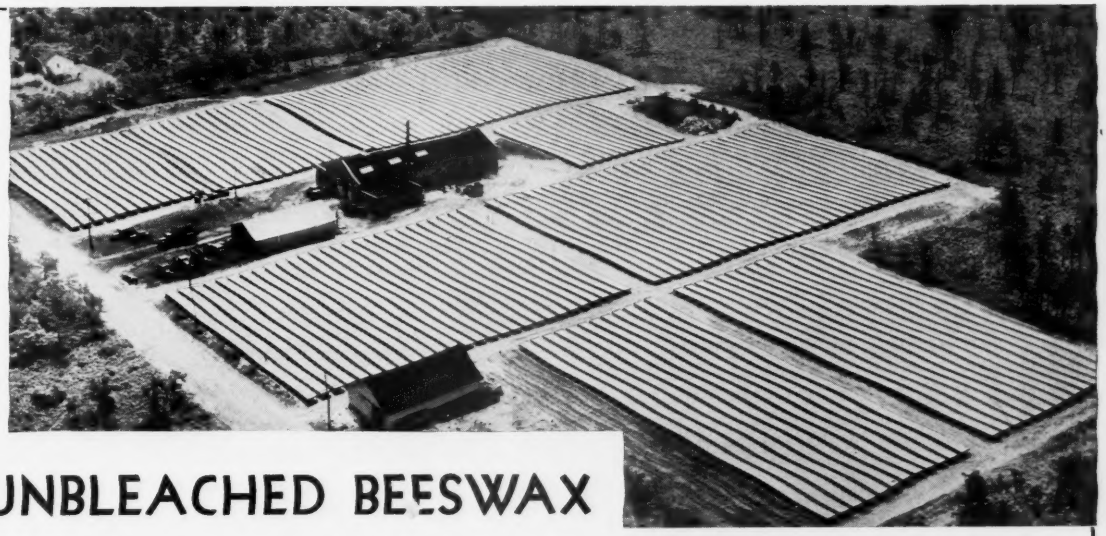

SUNBLEACHED BEESWAX

This is a photo of our Beeswax plant taken by the FAIRCHILD AERIAL SURVEYS, INC. It shows the factory together with the many large bleaching racks, which have a capacity of 100,000 lbs. of beeswax, making this plant the largest of its kind in the world.

Our sun-bleaching method, of which we have over 80 years experience, does not bring the beeswax into contact with any chemicals, either before, during or after the bleaching process. It simply oxidizes the coloring matter of the yellow beeswax completely, without changing the natural properties of the crude beeswax.

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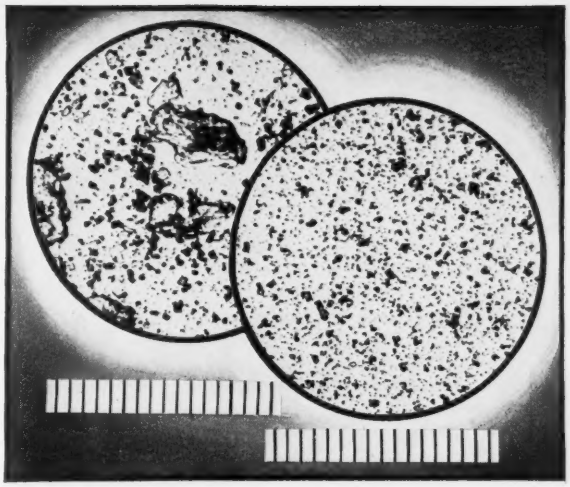

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Up until 1937, when vitamin B extract became available in large quantities, alcoholic psychoses were a serious and unmanageable problem. Since that time it has been possible to treat such conditions with a great deal of success. Of thirty-six cases that Brodsky treated, thirty-five are apparently cured. It is too early as yet to state definitely whether the cure will be permanent. All the chronic alcoholic psychoses treated were based on a history of alcoholism over a considerable period with hallucinations, particularly of the auditory threatening type, fear and disorientation. The treatment was as follows: (1) the removal if possible of alcohol, (2) daily injections of massive doses of crystalline vitamin B in the gluteal muscle, the dosage being anywhere from 500 to 2,000 units daily and (3) the administration of some such sedative as bromide, chloral and, in some cases, phenobarbital. Prompt improvement was observed in all cases within a period of weeks or months and an absolute cessation of all symptoms even though they had lasted for some time. There was no recurrence of a desire for alcohol. This peculiarity was noticed also in acute alcoholic psychoses. The acute psychoses were treated with spinal drainage and daily hypodermic injections of vitamin B into the gluteal muscles in small doses such as from 300 to 500 units, and these also showed an improvement and a lack of desire to return to the former habits. *Conn. State Med. Soc. J. vol. 2, p. 228.*

POTASSIUM AND URTICARIA

It seems logical to Rusk and Kenamore that potassium should be a valuable drug in the treatment of edematous lesions of the skin: first it lowers the cutaneous irritability directly and secondly its pharmacologic reaction is similar to and definitely allied with epinephrine. The results in six cases are far from conclusive but definitely indicate the therapeutic response. These patients had been tried on the various allergic regimens and orthodox treatment without success. A high protein, low sodium, acid-ash diet, with added potassium chloride, has produced promising clinical results in six cases of chronic urticaria. *Ann. Intern. Med. vol. 11, p. 1838.*

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DERMATITIS FROM DRY SHAVER

Shellow reports three cases of dermatitis and mentions four others following the use of dry shavers. Although the dry shaving method has often been successfully employed to reduce the amount of irritation to the skin, two factors may be responsible for the eruption. The lack of preparation in the use of the dry shaver may lead to neglect of washing the skin, thereby increasing the likelihood of infection. There is also traumatization resulting from the desire to obtain as close a shave with the dry shaver as with the ordinary razor. Observations have shown that this is almost impossible to achieve, but in an attempt to do so there is a tendency to cause constant manipulation or overuse of the device. The vigorous application leads to trauma by virtue of the fact that the head of the shaver is massaged on the skin, thereby producing irritation which leads to dermatitis. *J.A.M.A., vol. 110, p. 1748.*

SYNTHETIC AND NATURAL EPHEDRINE

The toxicity on mice, pressor action on spinal cats or cats anesthetized with nembutal, pressor action on unanesthetized rabbits, and the effect on blood sugar in the rabbit have been determined for natural and synthetic levo-ephedrine. From these tests synthetic and natural levo-ephedrine would appear to have identical actions. *E. C. Dodds and R. L. Noble, Pharm. J. 1938, p. 641.*

MAGNESIUM SULFATE IN WHOOPING COUGH

Soto Pradera calls attention to the value of magnesium sulfate as a symptomatic treatment of whooping cough. He gave daily intra-muscular injections of a 10 per cent. solution of magnesium sulfate to forty patients (thirty-eight infants and children and two adults). The dose varied from 0.25 to 1.1 cc. per kilogram of body weight until from fifteen to twenty injections had been given, according to the stage of the disease. The patients' urine was normal before, during and after the treatment. There was a decrease in coughing and vomiting early in the course of the treatment in thirty cases, with consequent clinical control of the disease after about fifteen injections. The treatment failed in ten cases. According to the author the treatment has an antispasmodic and sedative effect, by which the evolution and duration of whooping cough are favorably modified. The results were better than those he obtained in a group of 107 cases which were managed by the administration of common symptomatic treatments (antipyrine, belladonna, sodium bicarbonate and ether by rectum). Chronic nephritis contraindicates the treatment. Satisfactory results have been previously reported in Argentina. The author advises the preparation of a 50 per cent. solution of magnesium sulfate instead of the 10 per cent. solution which he used and to give injections in doses of 0.2 cc. per kilogram of body weight. The dose is well tolerated and the volume of the injection is smaller than that used in more dilute solutions and causes neither pain nor local inflammatory reaction. *Bol. Soc. Pub. Ped. vol. 10, p. 173.*

COPPER SULFATE TREATMENT OF TROPICAL ULCER

Gunther states that tropical ulcer and New Guinea mouth disease differ only as to the site of occurrence; each is fundamentally due to food deficiency, each presents a foul, sloughing ulcer, from each a spirochete and a fusiform bacillus can be isolated and each responds to the same form of treatment. The two conditions are almost entirely confined to natives. The first essential in general treatment is a diet rich in vitamins. The patients are not given rice but receive abundance of fresh vegetables; an autolyzed yeast preparation and cod liver oil are added. In local treatment copper sulfate acts with such rapidity in comparison with other forms of treatment that it can be regarded as specific. It is best used as a solution of 1 in 150 approximately. It is applied as a wet compress to ulcers and employed as a mouth wash in New Guinea mouth disease and as a continuous bath for tropical ulcer. No ill effects have been observed from its use. *Med. J. Austral. vol. 1, p. 348.*

ANTISEPTIC IN MILK

Human or cow milk added to an equal volume of agar did not support the growth or allowed only slight growth of B. diphtheriae, Staph. aureus, B. coli, B. prodigiosus, B. pyocyaneus, B. anthracis, streptococci, and unidentified wild yeast. The factors in human milk inhibiting bacterial growth ("inhibins") were inactivated by heating at 56 degrees C. for thirty minutes or by standing twelve to twenty four days at 5 degrees C., but not by repeated freezing and thawing. The "inhibins" in cow's milk were not inactivated by heating at 80 degrees C. for seven minutes but were destroyed by heating at 85 degrees C. for seven minutes. Attempts have not been made to identify the natural antiseptics. *H. Dold, E. Wizaman, C. Kleiner, Z. Hyt. Inf.*

GOLD SALTS IN CHRONIC CARDITIS

The author gives a detailed report of eleven cases of chronic carditis in adults in which treatment by gold salts was given with good results. In the eleven cases reported myochrysine was given in eight instances oleochrysine in three, allochrysine in one and both oleochrysine and myochrysine in another case. The immediate results were successful, and the general condition of the patients improved. Cardiac function was better, pain was relieved and the dyspnoea was diminished. Treatment appeared to have arrested the development of the disease, although it did not cure it. In many cases improvement continued, although the end-results of the treatment have yet to be estimated. *M. Wybauw. Scalpel, Liege.*

TREATING ENCEPHALITIS WITH BENZEDRINE SULFATE

Matthews enumerates the clinical results observed in twenty patients with chronic encephalitis having a parkinsonian syndrome treated with benzedrine sulfate, eighteen of whom have been receiving the drug by mouth for a period of from six to twelve months. Fifteen patients have shown definite sustained improvement which must be attributed to benzedrine alone, since no change was made in the medical regimen which was previously being carried out. The results have been encouraging and suggest further investigations. Patients repeatedly reported an aggravation of symptoms when they were without the drug for a few days. Benzedrine enhances the effect of stramonium, atropine and scopolamine and is best used in conjunction with these drugs in the treatment of postencephalitic parkinsonism. *Amer. J. Med. Sci. vol. 195, p. 448.*

UREA FOR WOUNDS

For the last year Baker has used from 25 to 30 per cent. solutions of urea for the treatment of wound infections. Results have been uniformly gratifying. It has been found to be stable in solution, nontoxic and remarkably effective in the removal of wound exudates, bringing about normal repair of tissues through its passive mechanical cleansing action. The material has been used in the same concentrations for the irrigation of wound sinuses. Open wounds demonstrating infection, fistulas or sloughs of the abdominal wall following operation, chronic discharging ulcerous areas, sinus tracts resultant from chronic bone infections and the like have undergone treatment with urea. Within a few days after institution of treatment the indolent areas of the wound begin to assume a freshened pink appearance and have a tendency to bleed freely. Wound exudates are readily extruded. Improvement is definite and continued. The odor from draining wounds is reduced to a minimum, often disappearing entirely. Pain due to prolonged use may be overcome by either reducing the strength of the solution slightly or by the use of a mild sedative before renewing the dressings or beginning the irrigations. *Rocky Mt. Med. J. vol. 35, p. 310.*

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VITAMIN F: We would like to have unbiased information concerning the present status of vitamin F and its value as a skin normalizer. Milwaukee.

The manufacturer of the first marketed vitamin F continues to release material concerning its efficacy and remains the best source of information on the subject. From our own sources, we understand that whether or not this substance is mentioned on the label, quite a few manufacturers incorporate it in their products and are apparently convinced of its usefulness.

SHOE WHITENER—FEMININE HYGIENE JELLY: I wonder if you could help me out with formulas for the two following products: a shoe whitener in cream form to be packed in tubes and a feminine hygiene jelly on the order of—Creme. Newark.

Shoe whiteners and similar industrial products are completely out of our line and we can only suggest that you consult one of the standard formularies to get the information you desire. We are not familiar with the type of feminine hygiene cream you wish to duplicate and could not give you a duplicating formula in any event, since it is contrary to our policy to promote this type of imitative competition. Jellies consist of starch glycerite and karaya mucilage mixtures containing from one to three per cent. of lactic, acetic, or boric acids as the active ingredients.

CLEANSING PADS: How can we secure a formula for solutions such as are being used in the production of "Facial Pads?" The item we refer to is the moist flannel pad which is being generally sold as a cleansing or facial pad. Los Angeles.

The solutions you have in mind consist of mixtures of alcohol, glycerin, water, and a wetting agent. The last ingredient is included partly for its detergent action and partly to permit better penetration of the pad by the solution.

Alcohol	15.0
Glycerin	3.0
Wetting Agent	1.0
Water	80.8
Perfume	0.2

LIQUID POWDER: I am interested in compounding a liquid powder and foundation preparation that will serve to cover minor blemishes. Can you give me information concerning both the water and the oil types of preparations in this class? Brooklyn.

In a water type of preparation, the powder consists of zinc oxide and colloidal clay suspended in mixture of water and alcohol containing a little glycerin. The glycerin is useful in retarding evaporation, but too much must not be used or the preparation will dry too slowly on the skin. The water must be boiled, preferably with the powders, in order to drive air out of solution and it may be necessary to skim the mixture after it has stood for a time. Only colors that will not bleed may be used unless the supernatant liquid is to be colored.

Water	63.0
Alcohol	15.0
Glycerin	2.0
Zinc Oxide	10.0
Colloidal Clay	10.0

A mixture of zinc oxide and zinc stearate in mineral oil (containing a little cetyl alcohol) should make an effective oil base foundation.

Mineral Oil	84.0
Cetyl Alcohol	1.0
Zinc Oxide	10.0
Zince stearate	5.0

Grind the pigments with part of the mineral oil, dissolve (heat) the cetyl alcohol in the rest of the oil, and mix the two. Bright lake colors may be used for tinting the powders in this case since there is little danger of these pigments bleeding into oil.

STABILIZING OINTMENTS: I have been manufacturing an ointment for pruritis which contains lanolin, petrolatum, glycerin and boric acid. In summer, however, the product is too soft and seems to separate. Can you tell me how I can make a more stable mixture? Kokomo.

Your mixture contains too little lanolin; increase its proportion until you have equal weights of petrolatum and lanolin. It is probably better, for the type of preparation you have, to make separate mixtures for hot and cold seasons, adding about 2 per cent. of beeswax or paraffin for the hot weather preparation.

QUESTIONS

ALGINATES: We would appreciate any information you can give us regarding the use of alginic acid, sodium alginate, or alginates in any form as used in the cosmetic industry, with particular reference to volume per annum and the purpose for which used. New York.

We have no statistics of any kind relating to the use of alginates in the cosmetic industry. We did reproduce descriptive material concerning the use of sodium alginate in cosmetic products on page 109 of the January 1938 issue of this magazine.

FACE CREAM: I wish to make a face cream containing just the three ingredients, namely, lanolin, cocoa butter and sweet almond oil. Will you please advise me as to the correct proportions of these materials to make a cream of good consistency that can be readily applied, has good cleansing action, and smooths the skin. Jacksonville.

You will have plenty of difficulty making the product you want with only the three ingredients, since you will obtain a yellow salve instead of a cream. Melt together 50 parts of cocoa butter, 25 of lanolin, and 25 of almond oil, stir until uniformly mixed, and then cool. This can be your starting point, adding more cocoa butter to increase consistency or more oil to make a softer mixture. You will probably have much better luck with a mixture containing 40 lanolin, 20 cocoa butter, and 10 almond oil. Melt these together, add 0.1 part of benzoic acid as a preservative, and when the mixture has cooled to 40° C. add 30 parts of water a little at a time, thoroughly incorporating the first addition before the next is made. Stir until cold. Consistency can be adjusted by altering the proportion of water, larger quantities making a harder cream.

LIQUID HAND SOAP: I recently acquired a formula for a liquid soap that has the best grease cutting qualities of any soap I ever used. I have distributed quite a few tins of this product to mechanics and factory workers, but it is lumpy and does not look like a quality soap. Will you please tell me how I can improve the appearance of my product. St. Louis.

Your mixture, consisting as it does of soap powder with added alkali, ought to be a good grease cutter, as well as being pretty tough on the hands. Since your customers don't seem to object to its action, then your best procedure is to modify your method of manufacture. Divide the water into two parts and heat each to boiling. In one dissolve the soap powder, in the other the sal soda. When both ingredients are completely dissolved, mix the two solutions. You might also try working with other types of soap powder than the one you mentioned.

OLIVE OIL VITAMINS: Will you kindly advise me what, if any, vitamins are imparted by pure olive oil when used in the manufacture of creams or lotions? Please state whether or not olive oil promotes the growth of hair on the hands and face when used in cosmetics. Columbus.

To our knowledge, no claims have been advanced that olive oil contains any vitamins. Furthermore, there is no evidence that any oil, when applied to the skin promotes the growth of hair. Obviously, if there were such an oil, it could be used very effectively on the scalp, in the treatment of baldness.

MANICURE SPECIALTIES: We wish to round out our manicure line by including a cuticle cream. Can you advise us how we may make a preparation of this type which will keep the cuticle in good condition. We should also like some advice regarding the composition of a cuticle remover. Kansas City.

A good cuticle cream can be made from lanolin, petrolatum, and water. A small amount of oil-soluble color may be included, if desired. Melt the lanolin and petrolatum together at a low temperature and stir in the water a little at a time.

Lanolin	45.0
Petrolatum	20.0
Water	35.0

A cuticle remover can be made by dissolving a small proportion of potassium hydroxide in water or rose water. A little glycerin may also be included to assist in the softening process.

Potassium hydroxide	3.0
Glycerin	8.0
Water	89.0

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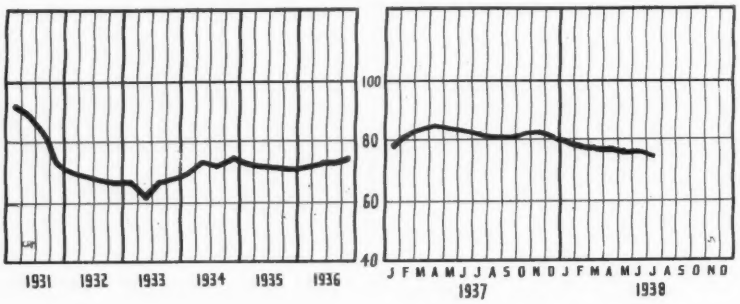
Up

Aloes, Curacao 2c
Aloin 15c
Anise oil 5c
Bergamot oil 15c
Birch tar oil 5c
Calamus oil 50c
Carnauba wax No. 1 1½c
Cream of Tartar 1c
Erigeron 15c
Lemon oil, Italian 10c
Menthol 5c
Psyllium seed, French 2c
Tansy oil $1.70
Tartaric acid 1c
Vanilla beans, Bourbon 10c
Mex. cuts 15c

Down

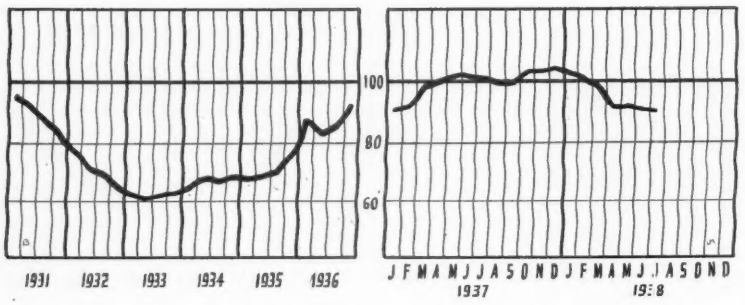
Acetphenetidin 30c
Aconite root 1c
Agar No. 1 5c
Almond oil, Sweet 3c
Anethol 5c
Arabic gum, Sorts ¾c
Asafoetida 1c
Balsam Peru 7c
Belladonna leaves 3c
Camphor, Japanese 9c
Cananga oil, Native 10c
Rectified 10c
Cardamon oil $1.50
Cascara Sagrada 1c
Cassia oil, Redist. 5c
Citronella oil, Ceylon 1c
Java 2c
Culvers root 3c
Damiana leaves 2c
Eucalyptus leaves 1c
Eucalyptus oil 5c
Fennel oil 15c
Gamboge gum 5c
Glycerin C.P. 1¼c
Golden Seal root 15c
Helonias root 5c
Henbane leaves 1c
Jaborandi leaves 4c
Jalap root 1c
Japan wax 1¼c
Lavender oil 5c
Lavender Spike oil 20c
Manna large 2c
Oleoresin orris 25c
Orange oil, cold prest. 15c
American dist. 5c
Papain, pure, powd. 5c
Phenylactic acid 25c
Plantago seed, blond 1c
Rhubarb root H.D. 2c
Saffron, American 10c
Valencia $5.00
Sage oil, Dalmatian 10c
Sarsaparilla root, Honduras 2c
Senega root 5c
Spermaceti 2c
Tragacanth gum No. 1 25c
No. 2 5c
Valerian root ½c
Wormseed, American 5c
Wormseed oil 15c

25 Cosmetic Raw Materials—Unweighted Price Index. 1926 = 100.



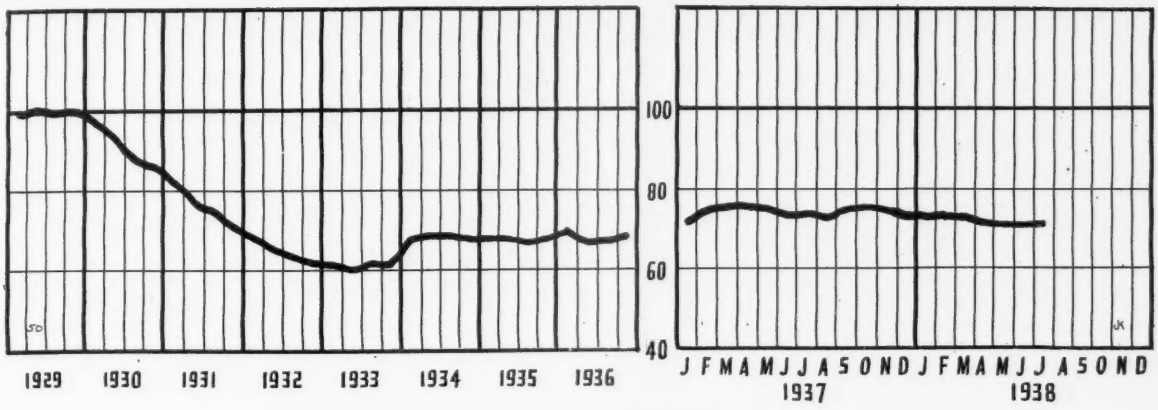
Cosmetic raw materials averaged lower in price, the index declining from 77.0 to 75.6 in July. Balsam Peru dropped from 72 to 65 cents; glycerin reached 14¾ cents, compared with the previous 16 cents; Japan wax lost 1¼ cents to be quoted at 9 cents; menthol increased from $2.95 to $3.00; spermaceti declined from 23 to 21 cents; tragacanth dropped from $2.75 to $2.50.

15 Botanicals—Weighted Price Index. 1926 = 100.



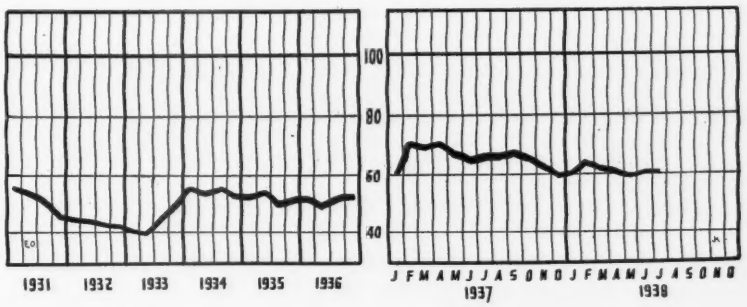
The botanicals index declined from 90.7 in June to 90.2 in July. Agar declined from 83 to 78 cents; aloes increased from 32 to 34 cents; belladonna declined from 15 to 12 cents; cascara lost one cent to be quoted at 9 cents; ergot rose from $1.10 to $1.25; rhubarb was 2 cents lower at 38 cents.

50 Raw Materials—Weighted Price Index. 1926 = 100.



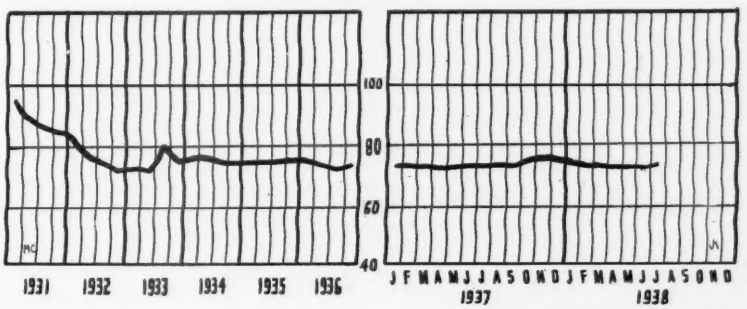
The 50 commodity index moved slightly upward in July to 71.8, compared with 71.6 in the preceding month. Although the advance in this index is relatively unimportant it is significant not only because it indicates a new trend but primarily because it points toward a business revival. Many items are in a position to reflect this change and it is generally conceded that the Fall and Winter months will witness higher prices.

15 Essential Oils—Weighted Price Index. 1926 = 100.



Nine changes in the fifteen components of the essential oil index left the index almost unchanged, the July figure being 60.3, as against 60.2 in the preceding month. Anise increased from 75 to 80 cents; bergamot increased from $3.75 to $3.90; cananga declined from $1.40 to $1.30; cassia declined from $1.00 to 95 cents; citronella was 2 cents lower at 38 cents; eucalyptus reached 34 cents, a decline of 5 cents; lavender declined from $3.30 to $3.25; lemon oil increased from $3.25 to $3.35; peppermint declined from $2.15 to $2.10.

15 Medicinal Chemicals—Weighted Price Index. 1926 = 100.



Changes in the medicinal group resulted in an average increase in prices, the index number of 74.5 for July comparing with 74.1 in June. Cream of tartar rose one cent to 23¼ cents and menthol was 5 cents higher at $3.00. A feature of this market was the higher price of pure ethyl alcohol made necessary by the increase in tax embodied as part of the Liquor Taxing Act.

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MENTHOL

There was no material change in the position of Japanese menthol during the past month either here or in the primary market. The spot market was extremely dull and the price easy at $3.00 per pound in case lots. At the source conditions continued as firm as heretofore.

Inquiries from here relating to government financial support of the menthol market remained unanswered which tended to give credence to earlier reports which indicated that the stability noted abroad was largely due to governmental efforts to stabilize export prices.

The recently imposed restrictions on Japanese currency had the rather unusual effect of strengthening the position of holders of menthol in Japan in that some unexpected buying resulted from the inability of Japan to pay for merchandise purchased from American exporters. Because of credit restrictions one large exporter to Japan has been induced to take payment in menthol which is being held for their account. Whether this development was more widespread was unknown but it is at least possible that it will become more general.

The future trend of menthol is rather uncertain because markets in Japan are very difficult to predict at this time. Generally speaking, the Japanese continue to take a very strong view regarding their raw materials. The price of menthol has been maintained in total disregard of conditions in the consuming markets of the world. Japanese pyrethrum has been advanced from as low as 7c and 8c per pound to as high as 18c to 20c. On the other hand Japanese natural camphor has been reduced rather sharply several times during the past few months. The reaction in camphor is said to be directly traceable to the sharp competition of synthetic camphor but it is also important to remember that synthetic menthol has also become an important factor.

It is most likely that the new crop of Japanese peppermint oil will augment the heavy carryover from the last crop before any material change occurs as far as demand for menthol is concerned. When the new crop arrives there will be renewed activity. There will be buyers and sellers of menthol so that the market is likely to change one way or the other during the next three months.

TARTARIC ACID

Manufacturers of tartaric acid announced an advance of 1c per pound for this item and the market is now quoted for prompt shipment only, no contracts, as follows: 245 lb. bbls. 27¾c per lb., 100 lb. kegs 27¼c per lb.

VANILLA BEANS

The scarcity of Bourbon vanilla beans continued to have an effect on spot prices. Another advance put the minimum price at $3.75 with the range to $4.15 per pound. Based on today's import costs the minimum price in New York should be at least $4.00. The available supply of vanilla in Madagascar is not more than enough to take care of contract requirements. It was said that the supply of Bourbon beans were the lowest in twenty years and that no relief can be expected for another year.

It is now more evident, however, that we are coming to a period in which larger production may be expected. New plantings are expected to yield in 1940, but it will not be possible to predict the approximate yield until the flowering in the Spring of that year. Should the prospects prove satisfactory it is possible that prices will be easier in anticipation of more ample supplies thereafter. Needless to say, import factors are very much interested in the 1939-40 crop.

Another strengthening influence at the present time is the fact that business in vanilla beans has been quite good. Imports up to June 1st are 1,000 cases above the same period of last year. It was said that a normal demand over the balance of this year would place the vanilla market in such a position that it would be difficult to find sufficient goods to take care of requirements.

Mexican beans also continue quite firm. Cuts were scarce and higher at from $3.65 to $3.90 per pound. Mexican whole beans continued without change, however, at a range of from $4.25 to $4.75 per pound.

ALCOHOL

New prices on pure ethyl alcohol will go into effect on July 1st. These price advances are made necessary by the 25c per proof gal. advance in the alcohol tax, the result of Federal legislation. The present tax is $2.00 a proof gal. as compared to the new rate of $2.25 per gal. included as part of the Liquor Taxing Act. All consumers of pure ethyl alcohol will pay prices based on the new taxation with the exception of hospitals which are exempt.

Denatured alcohol for industrial use is exempt from direct taxation but this increase in the alcohol tax will indirectly be paid by manufacturing consumers through the mandatory increase in the rate paid for permit bonds.

All prices on industrial alcohol have been extended to the end of this year and this should encourage manufacturing consumers to cover their requirements.

OLIVE OIL

An abundant supply of olive oil at attractive prices seems probable despite the fact that Spain is not producing normally. Revised preliminary estimates of world olive oil production in 1937-38 is placed at 2.3 billion pounds, compared with 1.6 billion pounds a year earlier, and an average of 1.8 billion pounds in the 5 years ending in 1936-37.

Supplies of olive oil are expected to be about 40 per cent. larger in the current marketing year than in 1937. The largest gains in production have been made in Italy, Greece, Portugal, Turkey, Algeria and Syria. Italy was the largest supplier of United States imports of 48 million pounds of edible olive oil in 1937, which were the smallest since 1920.

In response to larger world supplies, imports into the United States have sharply increased, and from January through March 1938 were more than 6 million pounds larger than in the same period of 1936 or 1937.

Domestic production of olive oil is limited practically to California, and has never exceeded 7 per cent. of domestic consumption in the 19 years that it has been reported. Domestic production from January through March totaled 2 million pounds, the same as last year.

CITRUS OILS

Higher prices prevailed on oil bergamot with the range now at from $3.90 to $4.00 per pound. This puts the market back to where it was at the first of the year. Dealers declared the inside price was minimum in view of the replacement position which again showed a tendency to advance.

Italian lemon oil also advanced again with the spot market quite firm at the prevailing range of from $3.35 to $3.90 per pound. The imported oil is now considerably out of price range when compared with the domestic article so that the market for Italian oil was inactive here. However, it is said that sufficient Italian oil is being shipped to other consuming centers to permit the maintenance of quotations.

Although this is the most important consuming season for citrus oils, domestic orange oil is in supply sufficiently large to have resulted in a sharp drop in spot prices. American cold pressed oil is generally quoted at $1.10 per pound but it was said independent producers offered at prices low enough to allow local dealers to quote much better than the above price. American distilled oil is currently offered at 75c per pound with competition for business extremely keen. Italian oil remained without open price change but was subject to shading under the influence of surplus stocks of orange oil in all producing regions.

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CITRONELLA OIL

With Java citronella oil currently selling at 38c per pound in drum lots the spot market has reached the lowest levels to prevail since January, 1937.

Production of citronella oil in the Netherlands Indies declined some 15 per cent. in 1937 due primarily to the low prices prevailing during 1935 and 1936. There was an improvement in prices during 1937, however, and this encouraged larger plantings of sereh grass with the result that production this year is expected to be substantially higher.

A factor which tended to undermine the price structure on citronella oil was the conservative buying on the part of the United States during the first six months of this year. European buying had sustained the primary market but the beginning of a business recession has been noted there, so that with this prop weakening prices for citronella oil have tended downward. Buying of citronella oil by American producers of synthetic menthol has also failed to develop in the volume that was anticipated when this synthetic became official in the U.S. Pharmacopoeia.

When the downward movement in citronella oil will stop it is impossible to say but with a weak market prevailing during the season of most active consumption it does not seem logical to assume that there could be any price improvement for at least the balance of this year.

GLYCERIN

Low cost crude material offered in this market from foreign sources, together with a seasonal increase in domestic crude production incident to an increase in soap production, was responsible for sharp price declines in chemically pure glycerin. It was said that a large American manufacturer of chemicals and explosives had purchased from Japan over 1,000,000 pounds of C.P. glycerin, thereby reducing to that extent the possible outlet for the domestic product.

New quotations on C.P. glycerin are as follows: tank cars 14c per lb.; drums, carlots 14¼c per lb.; less carlots in drums, 14¾c per lb.

ERGOT

From reliable sources it is indicated that the relationship between Spanish ergot merchants and the Franco Government is very close and that through mutual cooperation the Government will by decree fix the export price of Spanish ergot at not less than $1.50 per pound. As spot quotations are now at $1.25 per pound the new export price when effected will certainly result in a sharp increase in ergot prices here.

PSYLLIUM SEED

With renewed interest in psyllium seed as a natural laxative it is important to note the rising tendency of prices, especially for the French black seed. The current spot market for French seed was advanced again by 2c per pound placing prices at a range of from 12c to 14c per pound. These figures are still very low when compared to average prices some years ago but they are also considerably higher than the lowest levels at which this article has sold in the past.

While it is still too early to determine the size of the current French psyllium seed crop with any degree of accuracy, it is known that dry weather and frosts have destroyed much of the acreage planted. Dealers estimate that the 1938 yield will not exceed 100 metric tons, compared with around 350 tons in 1937. Stocks on hand, estimated at from 70 to 200 metric tons in the hands of producers and dealers, are considerably lower than at this time last year.

The French seed has to a considerable extent lost its popularity in this country primarily because of the price differential between it and the plantago or blond seed from India. The Indian seed is currently priced at from 9c to 10c per pound, also having advanced recently, so that the currently higher price for the French material has not materially widened the price differential. Imports of French seed in 1930 amounted to 2,026,596 pounds whereas in 1937 United States imports of French psyllium amounted to only 494,283 pounds.

ALOIN

Aloes, the raw material for the production of aloin, continued as firm, and the possibility of securing adequate supplies as uncertain, as heretofore reported. It was therefore necessary for producers of aloin to again move prices forward with the following schedule now prevailing: barrels $2.40 per lb., kegs $2.42 and fibre drums $2.49.

WORMWOOD OIL

Quotations for wormwood oil were shaded with the market range now at from $2.60 to $2.65 per pound. The market was competitive and further lacked the support of large manufacturing consumers. The inclination was to await the arrival of new crop material in the Fall.

GOLDEN SEAL ROOT

Golden seal root was again marked down as the result of new crop influence and available supplies on hand. The range of quotations for whole root is now from $3.25 to $3.30 per pound and from $3.40 to $3.45 for powdered goods.

PAPAIN

The spot market for powdered papain advanced 5c per pound during the past month to a range of from $1.30 to $1.35.

World demand for papain, which is obtained from the juice of the papaya fruit, is increasing steadily, judging from Ceylon's exports, the country which at present supplies the bulk of world requirements for this product.

The United States, which last year imported 180,000 pounds of papain valued at $205,000, is the world's largest user of this material which has long been used in medicine as a digestant.

Finding that the soil of abandoned mining areas in Perak is suitable for the cultivation of papaya trees, the Department of Agriculture of British Malaya is urging settlement of these regions for that purpose, it is reported. Papaya fruit is now also being produced in Florida and California.

CREAM OF TARTAR

Producers of cream tartar advanced prices 1c per pound and are now offering for prompt shipment, no contracts as follows: U.S.P. XI powder, 250 lb. bbls. 23¼c per lb., 100 lb. kegs 23¾c per lb.

EPHEDRINE

The market for ephedrine is seasonally quiet. The alkaloid is currently selling at $3.50 per oz. with the hydrochloride and sulfate at $2.50 per oz.

The situation relating to ephedra vulgaris, the shortage of which resulted in the very high price levels of last winter, has been materially relieved by increased imports from various sources. While ephedrine has reacted to this condition to a considerable extent, prices are still above a normal level. To what degree prices will react it is impossible to say, but it is logical to assume that there will be further recessions next winter.

Imports of ephedra vulgaris (ma huang) aggregated 205,694 pounds valued at $14,563 in May, bringing the total for the first 5 months of this year to 754,541 pounds valued at $50,640. In the corresponding months of 1937 imports amounted to 399,891 pounds valued at $8,312.

Spain appeared on the list in May for the first time as a supplier of ephedra vulgaris with shipments to the United States amounting to 9,485 pounds. During the past few months India became important as a source of supply for ma huang, imports from that source amounting to 446,350 pounds during the months of March, April and May. China has also resumed shipments in important quantities the May imports from that country amounting to 105,584 pounds as compared to only 3,565 pounds in April.

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